SECTION 7.0 FEATURES

A variety of features have been recognized at Delaware archaeological sites and attempts have been made to describe and interpret these manifestations qualitatively and quantitatively (Table 7.1). Investigations at the Delaware Park site (Thomas 1981) in New Castle County, a Middle Archaic through Late Woodland occupation site, defined seven feature types based on size (as determined by volume), descriptive shape categories (i.e., side shape, surface and base configurations), and feature depth. Feature function was hypothesized based on soil characteristics and observations such as sidewall burning, base configuration, and artifact type and distribution. However, artifact distributions were generalized in that study and represented discard activities rather than evidence of primary feature function. In most cases, feature fill was not stratified, indicating a relatively short-term occupation and infilling episode. In several features, thermally altered stone (TAS) was recovered within the feature fill rather than located on the feature floor, also suggesting feature reuse or post-depositional processes.

Based on features identified at the Snapp (Custer and Silber 1995), Leipsic (Custer et al. 1996) and Pollack sites (Custer et al. 1994), a broader typology of features was developed (Custer 1994). This system defined 12 feature types based on morphology (Table 7.1), expanding the typology presented for the Delaware Park Site. Feature function was extrapolated from the archaeological literature and ethnographic comparisons. Analysis of taphonomic processes such as repeated plowing and sandy soil leaching of organic materials also contributed to the final morphology of the features.

HICKORY BLUFF FEATURE TYPOLOGY

In an attempt to provide analytical parameters for archaeological features and to account for various types of taphonomic processes, a feature typology system was developed for Hickory Bluff. This included artifact features, basins (which may or may not represent cultural activity), surface features, biotic patterns, geomorphic features, and natural or undetermined discontinuities (Table 7.2). During the Hickory Bluff excavations, all anomalies identified were assigned a feature number. Anomalies were bisected to provide information on dimensions, morphology, and content. A total of 331 features were recorded; these represented the results of both Native American activity and natural processes (Appendix C). Natural processes consisted of depositional features (e.g., root channels and tree-molds, and rodent burrows and tunnels) and fluvial features (i.e., lenses of Columbia formation sands and gravels). Identifying and defining natural features was important for discussing site formation processes.

The Hickory Bluff feature typology represented a combination of factors that build, in part, upon previously established typologies, and was based on the aggregation of artifacts, size, morphology, and consistency. During excavation, disturbances were noted for most features and included tree root penetration and rodent tunnels. If the disturbance was estimated to represent greater than 30 percent of the observed feature, the feature was designated as a combination feature exhibiting characteristics of two different types of archaeological manifestations. Several combination features were the result of two different types of cultural activity. Forty-six features were identified as combination features.

Table 7.1 Previous Feature Typologies for Native American Sites in Delaware

Description	Delaware Park Site (Thomas 1981)			Woodland I Period (Custer 1994)		
	Type Designation	**Dimensions***	**Projected Function (s)**	**Type Designation**	**Dimensions***	**Projected Function**
Ovoid, saucer-shaped basin				Type 1	Length: 2.08m Width: 1.29m Depth: 0.63m	remnant sub-basements of pithouses
Large triangular, circular, or ovoid basin with shallow/deep profile dichotomy	Type B	Depth: 0.57m	Semi-subterranean pithouse; steam baths; menstrual huts; storage areas; wild fowl hunting blinds	Type 2	Length: 2.65m Width: 2.65m Depth: 0.79m	remnant basement and sub-basements of pithouses
Small circular and shallow saucer-shaped basin	Type E	Depth: 0.59m	Bottom remnants of burials or hearths	Type 3	Diameter: 1.08m Depth: 0.2m	processing/storage feature; earth oven
Small circular basin with conical base				Type 4	Diameter: 1.17m Depth: 0.57m	processing/storage feature; earth oven
Cylindrical basin with flat base	Types A, D, F	A Depth: 1.14m D Depth: 0.85m F Depth: 0.48m	Storage units; animal traps; mushroom cellars; winter occupation domiciles; burial chambers; cisterns; plan sprouting areas; refuse pits	Type 5	Diameter: 1.7m Depth: 0.7m	processing/storage feature; earth oven
Kidney-shaped basin (s) with conical bases				Type 6	Diameter: 3.6m Depth: 0.7m	pithouse remnants; sweatlodge remnants
Ovoid basin with conical base				Type 7	Diameter: 1.8m Depth: 0.63m	earth ovens; hearths
Ovoid basin with irregular base				Type 8	Diameter: 3.16m Depth: 0.51m	unknown
Ovoid basin with sloping sides to flat base	Type C	Depth: 0.68m	Earth ovens; hearths; pottery kilns; lithic heat-treating hearths; refuse pits; tanning basins	Type 9	Length: 1.90m Width: 1.6m Depth: 0.51m	unknown
Circular basin with conical sides/base				Type 10	Diameter: 1.2m Depth: 1.16m	processing/storage feature; earth oven
Ovoid basin with sloping sides and sloping base				Type 11	Length: 1.98m Width: 1.56m Depth: 0.52m	
Large circular basin with exterior postholes and small interior basins and a central concentration of thermally altered stone				Type 12	Diameter: 8.0m	Pithouse with exterior postholes and interior storage features and central hearth

*averages

Table 7.2 Hickory Bluff Feature Typology

Hickory Bluff Types	*Description*	*Frequency*
Type A - Artifact Features	Cultural aggregation of artifacts	**45**
Type A1	Concentrations of thermally altered stone	39
Type A2	Concentrations of diagnostic artifacts	3
Type A3	Concentrations of modified lithic raw materials	2
Type A4	Concentrations of lithic raw materials	1
Type B - Basins	Displacement of soil	**108** (5*)
Type B1	Large- more than 2 m in greatest dimension	50
Type B2	Medium – between 1 and 2 m in greatest dimension	19
Type B3	Small – less than 1 m in greatest dimension	34**
Type C – Surface Features	Modification of the ground surface	**7**
Type C1	Compacted soils	2
Type C2	Areas of charcoal flecking and/or soil discoloration	5
Type D – Biotic Patterns		**110**
Type D1	Root channels	73
Type D2	Tree molds	20
Type D3	Rodent burrows/tunnels	17
Type E – Geomorphic Features		**25**
Type E1	Rise in B- or C-horizons	13
Type E2	Transitional E/B- or E/C-horizons	4
Type E3	Fluvial	8
Type F – Natural		**36**
Type F1	Untyped natural discontinuities	36
Total		**331**

* five basins were not classified by subtype
** two B3 features were historic postholes (Appendix A)

Each feature type identified at Hickory Bluff is discussed below; specific features for each subtype were selected as examples for detailed discussion. Detailed feature descriptions that include location, dimensions, soil characteristics, shape, and artifact association for all 331 Hickory Bluff features are located in Appendix C.

Type A: Artifact Concentrations

Type A features consisted of concentrations of artifacts observed during fieldwork. This feature type included concentrations of TAS (either fire-cracked or fire-reddened)(subtype A1), concentrations of temporally or functionally diagnostic artifacts (subtype A2), and concentrations of either modified (subtype A3) or unmodified lithic raw materials (subtype A4) (Table 7.2). Forty-five features were classified as Type A.

Type A1 features consisted of 39 TAS concentrations. This type was further sub-divided by size (Table 7.3). Type A1 features were distributed along the St. Jones River terrace edge in unplowed portions of the Hickory Bluff site (Figure 7.1).

Table 7.3 Type A1 Feature Subtypes

Type A1 subtypes	Description	Frequency
A1-a	Less than 1 m in diameter	26
A1-b	Between 1 and 2 m in diameter	10
A1-c	More than 2 m in diameter	3

Twenty-six features were identified as subtype A1-a (Figure 7.1). These features were defined as less than 1 meter (m) in diameter. These features were relatively shallow ranging from 3 to 14 centimeters Type B1 Feature Subtypes at Hickory Bluffers (cm) in depth based on thickness of TAS concentrations. The planviews varied from irregular to circular or ovoid. Most profiles indicated a single level of TAS on a horizontal plane. Features 230 and 284 contained two tiers of TAS; only Feature 98 was associated with a small basin. The number of TAS within each feature ranged from 3 to 96 fragments. All artifact types were associated with A1-a features; 57 percent of the features contained debitage, 53 percent of the features were associated with cobbles or pebbles and 42 percent of the A1-a features exhibited charcoal and floral remains. Most A1-a features represented small frequencies of TAS scattered over small areas.

Feature 98, located in Locus A, consisted of a small circular concentration of TAS (subtype A1-a) situated in a small basin (subtype B3) (Figure 7.2). The feature measured about 0.52 m in diameter and 0.14 m in depth with gradually tapering sides and a rounded base. The 41 TAS represented a single tier of stone lining the basin. The feature matrix was slightly darker than the adjacent E-horizon; charcoal flecks were visible throughout the fill. In addition to the fragments of TAS, one Marcey Creek ceramic sherd, and both hickory and walnut shells were recovered. This feature yielded a radiocarbon date of 2660 +/- 40 years B.P. from a charred hickory nut fragment.

Feature 284, located in Locus G, consisted of a two-tiered cluster of 78 TAS (Figure 7.3). The feature measured 1.0 x 0.40 x 0.12 m. The uppermost tier was identified at the top of the E-horizon, situated beyond the boundaries of large basin Feature 184. This dense cluster was arranged in a 20 cm diameter round configuration; several TAS occurred in a linear pattern along a northwest line. After this first tier was recorded and removed, a second tier of TAS was identified. This second tier was more diffuse and exhibited a linear configuration from northwest to southeast.

Other artifacts recovered included a Woodland I side-notched projectile point, 1 Wolfe Neck ceramic sherd, 3 Clay Tempered ceramic sherds, 1 core, 4 flakes, 1 chip, charcoal, and floral remains.

Feature 296, located in Locus G, consisted of a tightly clustered, sub-ovoid area of 96 pieces of TAS (Figure 7.4). The feature was located at the top of the E-horizon and was associated with thermally altered soils and an increase in charcoal flecks. The feature measured 0.44 x 0.42 m. Artifacts associated included 1 untyped projectile point, 1 large polished semi-lunar slate knife or ulu fragment, 2 cores, 8 flakes, charcoal, and floral remains. A radiocarbon date of 570 +/- 40 years B.P. was obtained from a charred hickory nut fragment.

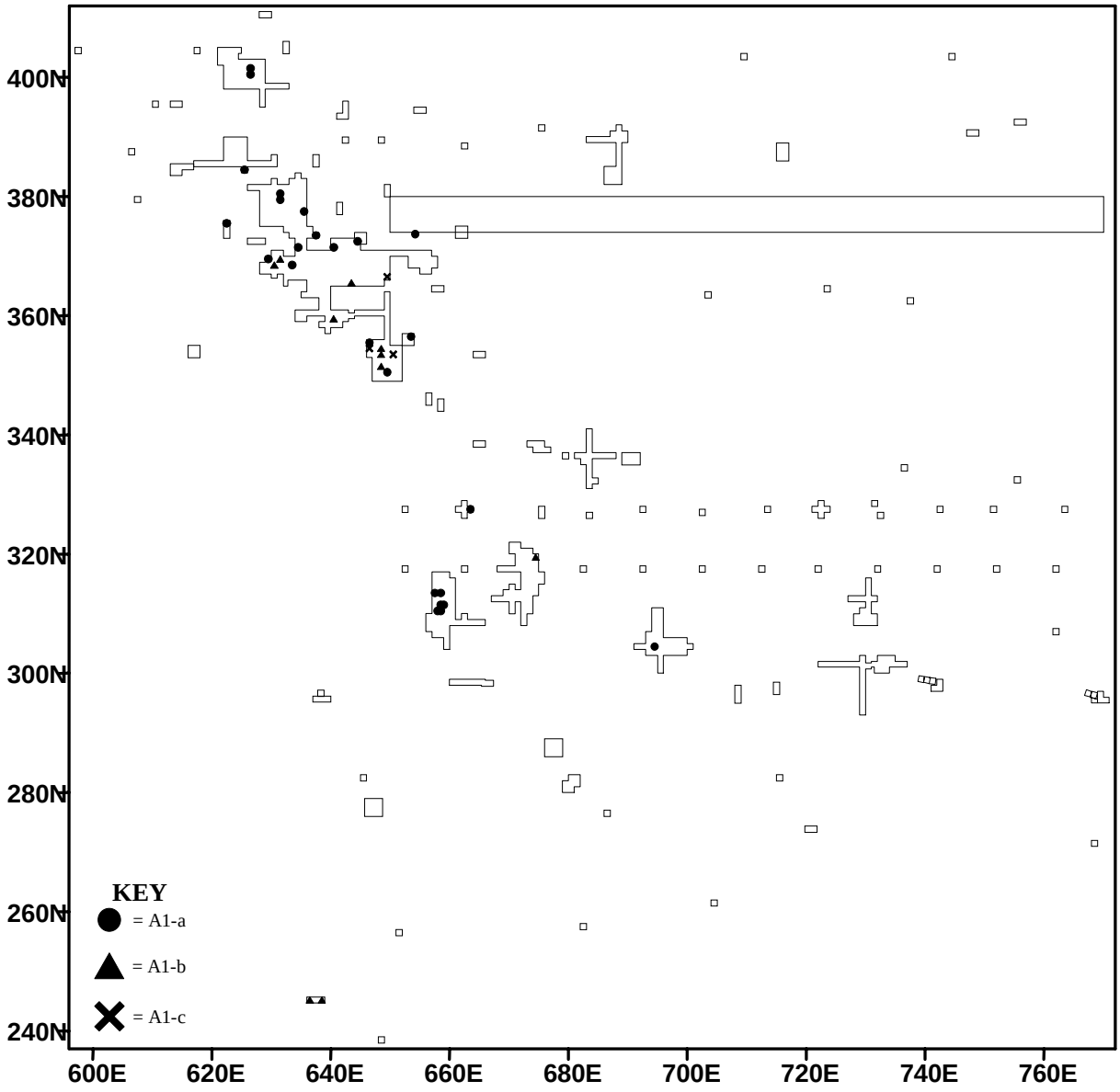

Figure 7.1 Location of All TAS (A1) Features of Type

Ten features were classified as A1-b (Figure 7.1). These TAS clusters were defined as more than 1 m but less than 2 m in diameter and ranged from 4 to 15 cm thick. The planviews varied in shape from irregular to ovoid. Most profiles indicated a single tier of TAS on a horizontal plane. Features 46, 158/159/160, and 176 contained several tiers of TAS. Feature 182 exhibited two ovoid concentrations of TAS within a larger diffuse scatter. The number of TAS within the features ranged from 19 to 679 fragments. All artifact types except faunal remains were associated with A1-b features. Seventy percent of these features contained cobbles or pebbles, 50 percent of the features also exhibited tools and charcoal and 40 percent contained debitage, cores and floral remains. These larger TAS concentrations clustered in discrete locations along the terrace edge, primarily in Blocks F and G.

Figure 7.2 Feature 98 in Bisection (Excavation in Progress)

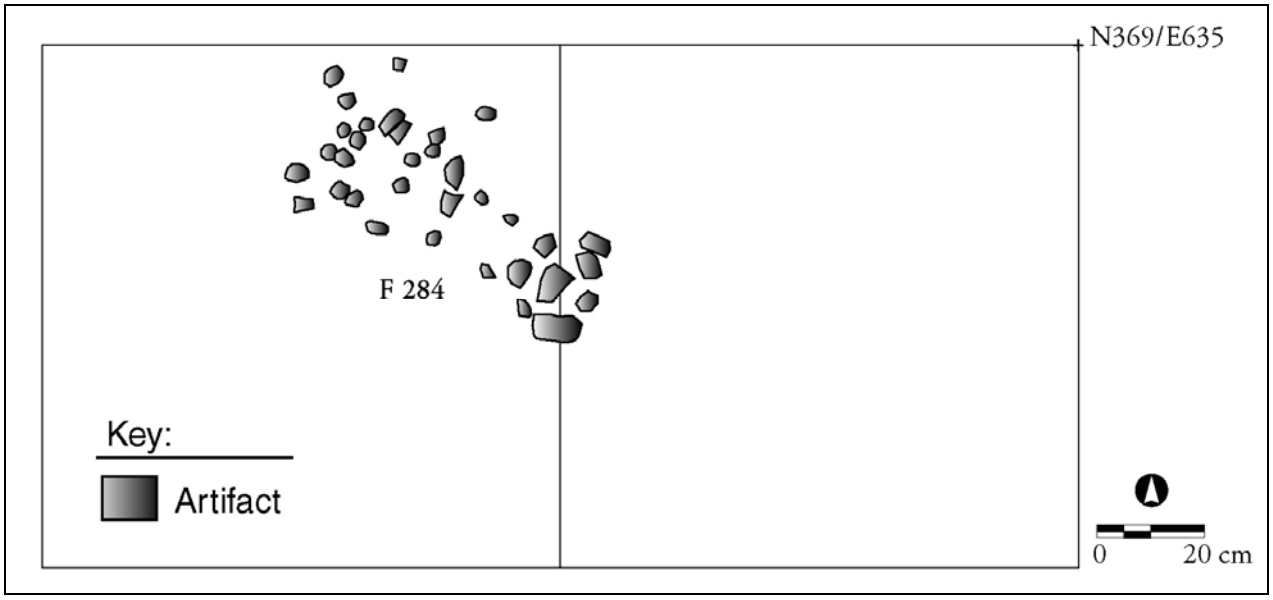

Figure 7.3 Composite Planview of Feature 284

Figure 7.4 Excavation of Feature 296 (in Progress)

Feature 46, located in Locus F, consisted of a large dense concentration of 700 TAS fragments contained in three tiers, situated in a 6 square meter area (Figure 7.5). The feature was identified at the interface between the A- and E-horizons; no discernable stain or soil discoloration was associated with the rock. Artifacts recovered from this feature included 1 Woodland I stemmed point, 2 Marcey Creek ceramic sherds, 4 unidentified ceramic sherds, 1 pitted stone, 2 hammerstones, 1 late stage biface, 1 steatite slab, 2 cores, 35 flakes, 7 chips, and floral remains. A radiocarbon date of 850 +/- 40 years B.P. was obtained from a charred White Oak fragment.

Feature 87, located in Locus G, consisted of a diffuse scatter of 170 TAS fragments in a sub-ovoid configuration (Figure 7.6). The cluster was located at the top of the E-horizon. The feature measured 1.1 x 1.05 m. A teardrop projectile point, two flakes, charcoal, and floral remains were associated. Three bifaces and several ceramic fragments were located adjacent to the feature. A radiocarbon date of 1550 +/- 40 years B.P. was obtained from a charred hickory wood fragment.

Feature 176, located in Locus F, consisted of a discrete concentration of 154 cobbles and 109 TAS fragments, adjacent to a series of other stone features (Features 158, 164 and 280). This feature measured 1.5 x 1.2 x 0.12 m (Figure 7.7). Artifacts associated with Feature 176 included 1 core and floral remains. A radiocarbon date of 610 +/- 40 years B.P. was obtained from a charred hickory nut fragment. The feature differed from the adjacent features because the

Figure 7.5 Excavation of Feature 46 (in Progress)

Figure 7.6 Excavation of Features 87, 88 and 89 (in Progress)

Figure 7.7 Excavation of Feature 176 (in Progress)

stones were less cracked and/or reddened. However, their large size and arrangement suggested cultural placement, despite their seemingly unaltered appearance. The density of the cluster increased and became more concentrated with depth, while the feature area decreased (from 150 to 50 cm). Despite the stacked nature of the cluster, there was no evidence of an excavated basin or soil discoloration; however, a shallow surface depression was noted.

Three features were identified as subtype A1-c (Figure 7.1). These features were defined as more than 2 m in diameter and ranged from 6 to 13 cm thick. The planviews were irregular; each profile indicated a single tier of TAS on a horizontal plane. The number of TAS within each feature ranged from 57 to 68 fragments. Charcoal or faunal remains were not observed in any of the three A1-c features. Debitage and cobbles/pebbles were associated with all three features; 66 percent (n = 2) contained ceramics, tools, and/or cores. These three features reflect dispersal of a limited number of TAS over a wide area rather than dense concentrations of TAS.

Feature 55, located in Locus G, consisted of a diffuse scatter of TAS (Figure 7.8). The feature encompassed an area 2.25 x 1.40 m with an indistinct shape. The feature was not densely concentrated except for a small clustering in the southeastern portion. A higher density of TAS occurred below the southern portion of the feature and may have represented a second tier of stone. No soil discoloration or basin feature was associated. Artifacts recovered from this feature included 1 Clay Tempered ceramic, 1 early stage biface, 9 flakes, 1 chip and 57 TAS fragments.

Figure 7.8 Excavation of Feature 55 (in Progress)

Feature 164, located in Locus F, consisted of a diffuse scatter of 66 TAS fragments in an area measuring 4.1 x 3.0 m (Figure 7.9). Artifacts associated with this feature included 1 pitted stone, 1 abrader, 1 flake, and 4 cores.

Feature 281, located in Locus F, consisted of a diffuse scatter of 68 TAS fragments in an area measuring 2.64 x 1.3 m (Figure 7.10). The feature was identified at the A/E interface and was situated west of Feature 280. Feature 281 contained two distinct components. The first was a partial circular arrangement of fragmented rock on the south and west edges of the feature. The second component consisted chert shatter along the center and east side of the feature. No soil discoloration was noted. Artifacts recovered included 1 untyped projectile point, 1 Clay Tempered ceramic sherd, 2 cores, 1 flake, 1 chip, and floral remains.

Subtype A2 consisted of three features: Features 114, 178, and 415, dispersed along the terrace edge (Figure 7.11). Feature 415 was a ceramic concentration previously identified (originally designated Feature 107 by Liebeknecht et al. 1997).

Feature 114, located in Locus A, consisted of a concentration of 8 Hell Island ceramic sherds and 1 Wolfe Neck sherd in an area measuring 0.70 x 0.35 m (Figure 7.12). The cluster was identified at the top of the E-horizon and was not associated with any discernable basin feature, soil discoloration, or increase in charcoal. Additional fragments of the Hell Island vessel were recovered in the adjacent 4.0 x 4.0 m area. One flake was also associated.

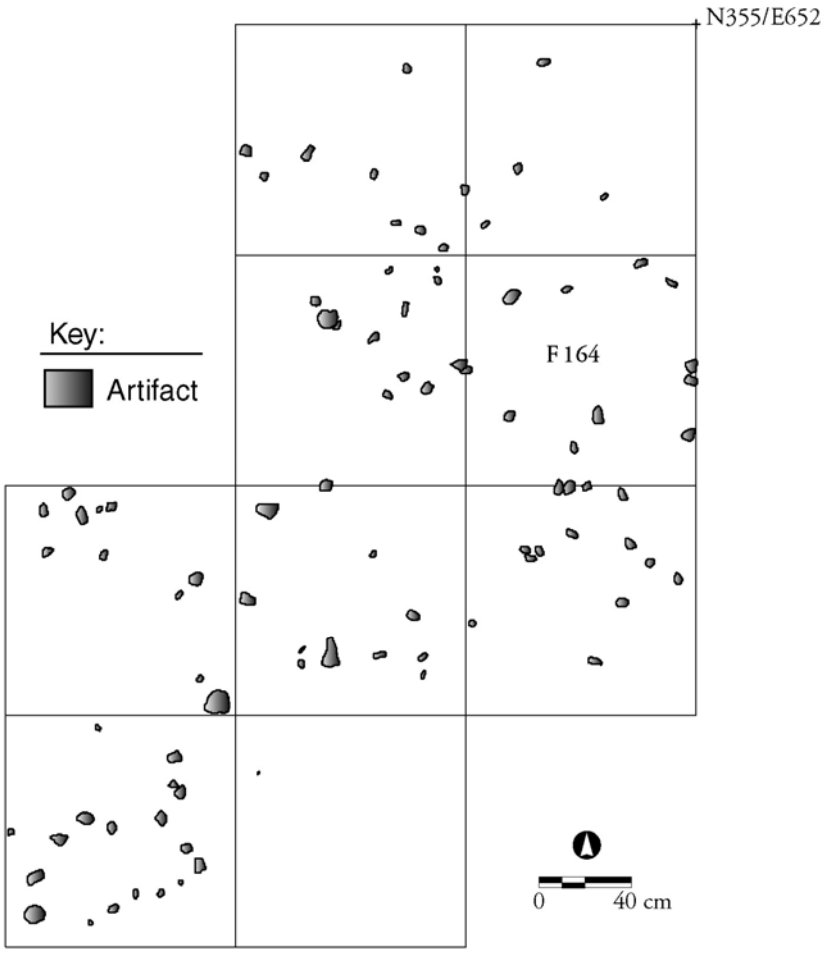

Figure 7.9 Planview of Feature 164

Feature 178, located in Locus G, consisted of a concentration of Marcey Creek ceramic sherds (Figure 7.13). The cluster was observed in the E-horizon and was not associated with any noticeable soil discoloration. The feature measured 0.30 x 0.22 m. The size of the sherds and their close proximity suggested that they were broken and/or discarded at the same time. Four TAS were also associated.

Feature 415, located in the Locus A, Block 2, consisted of a concentration of 56 clay tempered ceramic sherds in an area measuring 0.23 x 0.20 m (Figure 7.14). The ceramic sherds were stacked and included both cord-marked and net-impressed surfaces.

Two features were identified as subtype A3: Features 84 and 294 (Figure 7.11). Feature 84, located in the northwest part of the site, consisted of a cluster of in situ artifacts in the E-horizon (Figure 7.15). The cluster measured 0.60 x 0.40 m. No soil discolorations or basin features were observed. The artifacts included 2 anvil stones, 1 core, 3 flakes, and 3 TAS fragments. Feature 294, located in Locus G, consisted of a discrete cluster of 1 cobble and 2 cobble tools stacked on top of each other (Figure 7.16). No soil discoloration or basin was observed around the tools. The feature measured 0.16 x 0.12 m. The artifacts included 1 abrader, 1 hammerstone, and 1 cobble.

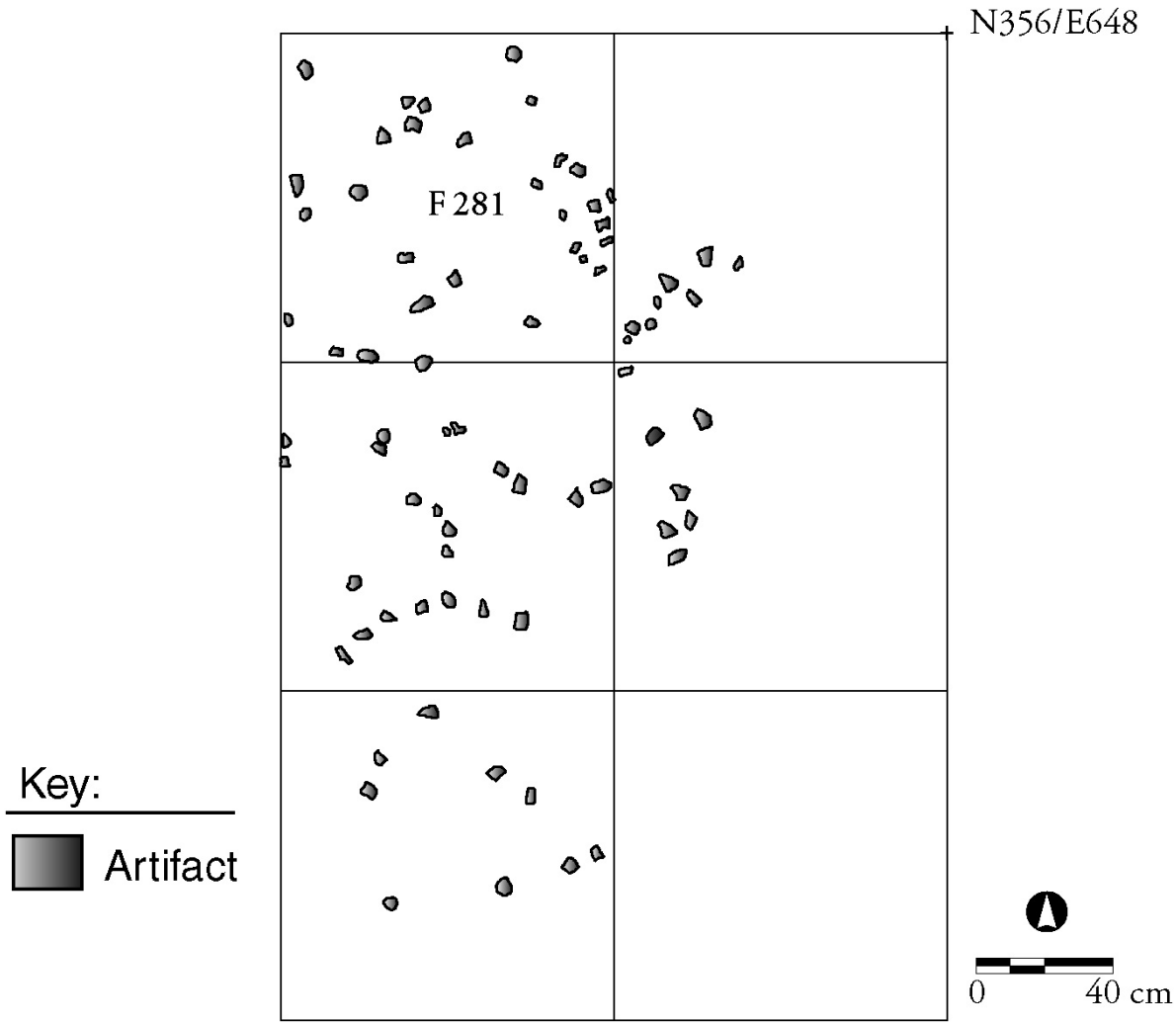

Figure 7.10 Planview of Feature 281

Feature 229, located in the backhoe strip, represented the only Type A4 feature at Hickory Bluff (Figure 7.11 and Figure 7.17). Feature 229 consisted of an irregular concentration of lithic raw material encountered at the Ap-E interface. Excavation revealed that the stones were not contained within any discernable basin, but were situated on the E-horizon surface. The size and density of lithic materials in the E-horizon was indicative of cultural selection. The feature was 1.05 x 0.80 m and included 2 flakes, 2 chips, 2 cores and 71 cobble/pebbles. The cobbles/pebbles were not modified by flaking nor altered by thermal processes. The cobbles/pebbles consisted of quartz, quartzite, jasper, chert and ironstone. The cobbles/pebbles represented three specific size grades based on diameter: 3-4 cm (size grade 4), 4-5 cm (size grade 5), and >5 cm (size grade 6).

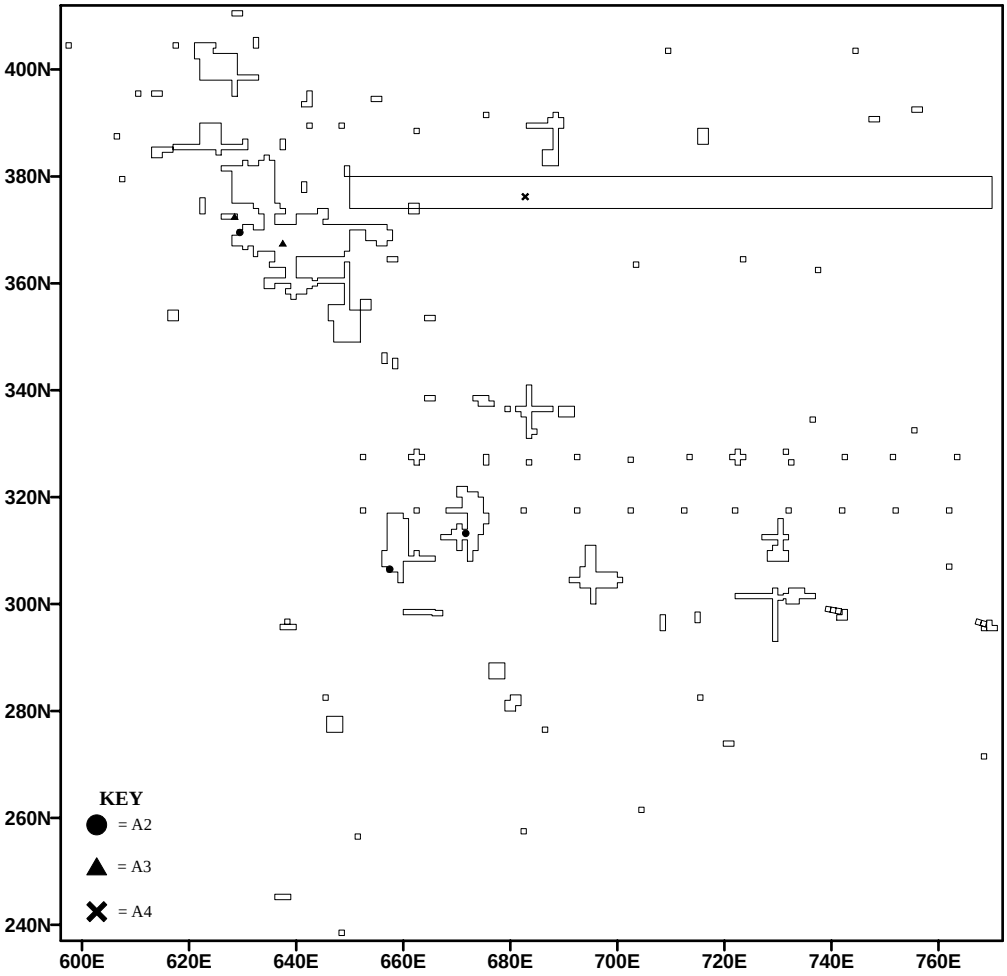

Figure 7.11 Location of All Artifact Cluster Features by Type (Non-TAS)

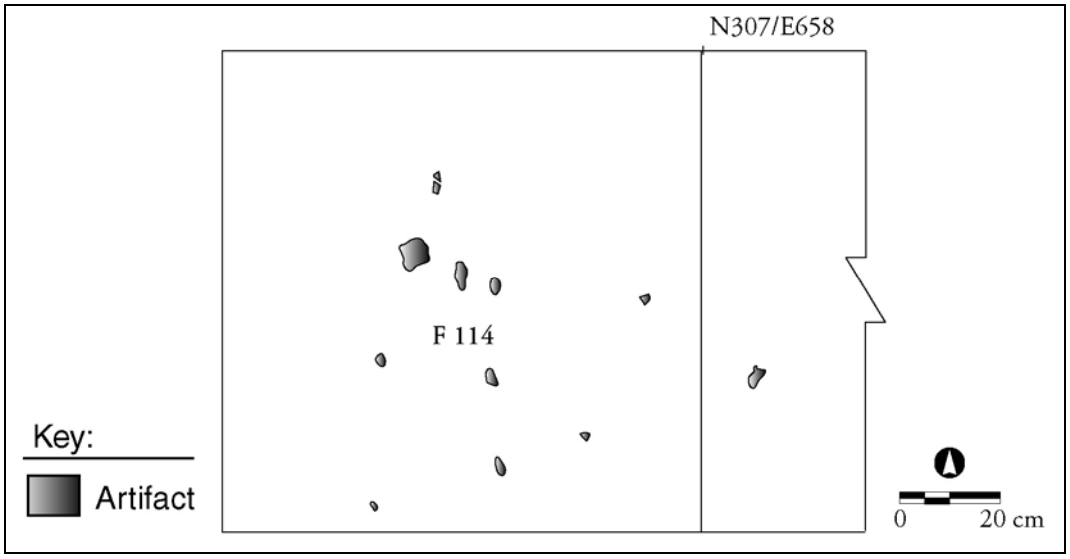

Figure 7.12 Planview of Feature 114

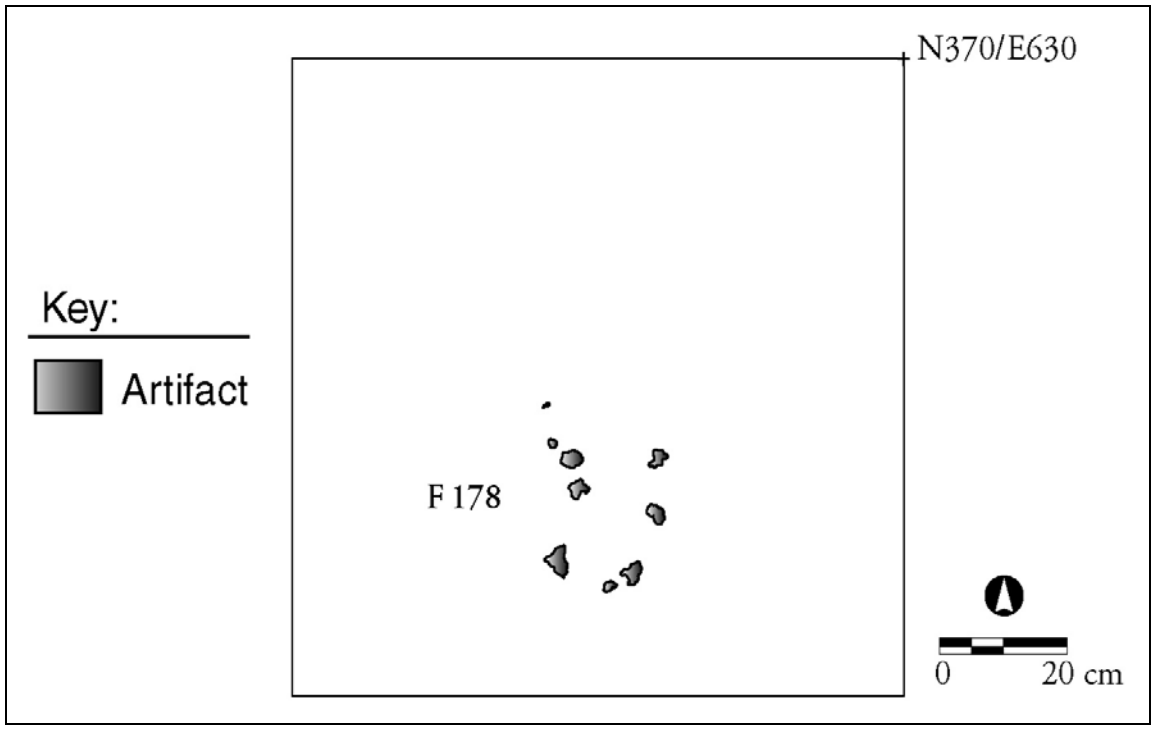

Figure 7.13 Planview of Feature 178

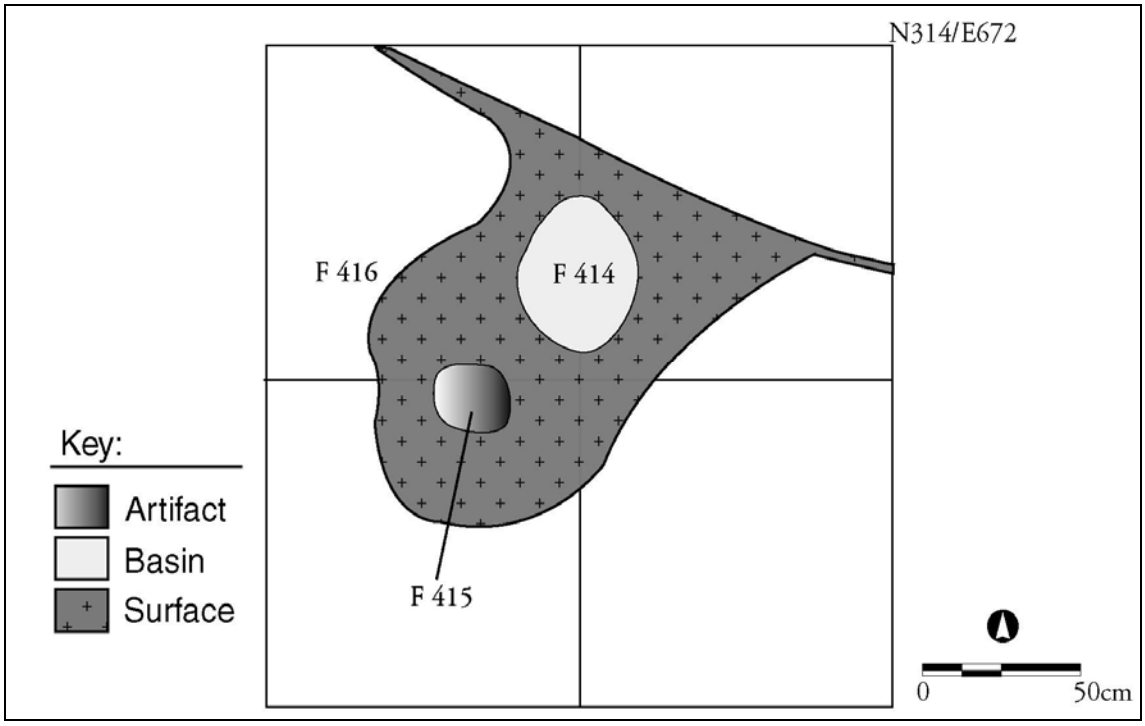

Figure 7.14 Planview of Feature 415

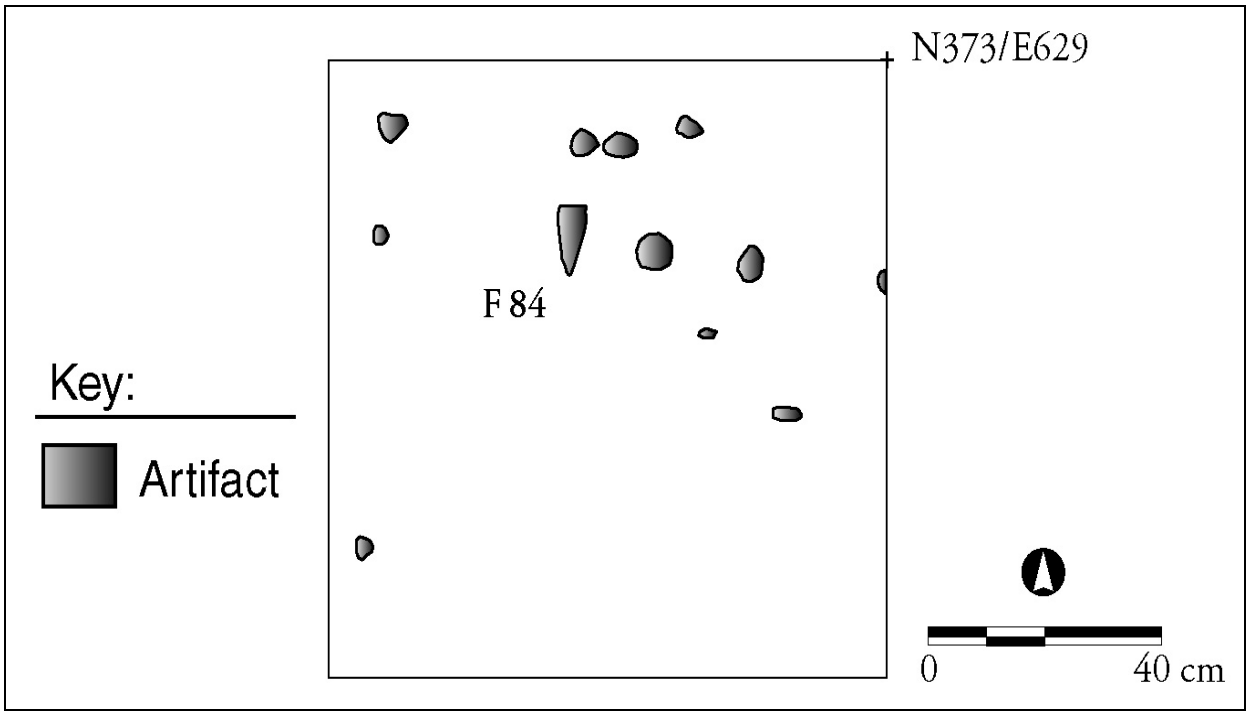

Figure 7.15 Planview of Feature 84

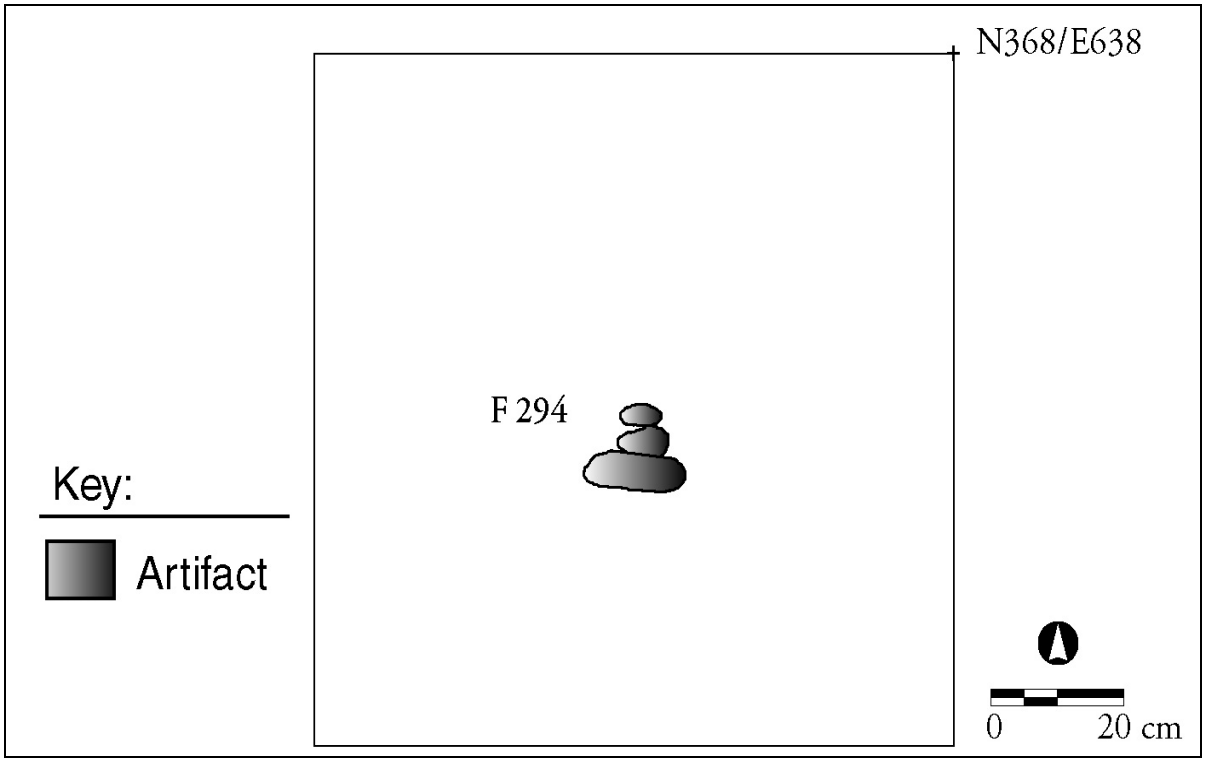

Figure 7.16 Planview of Feature 294

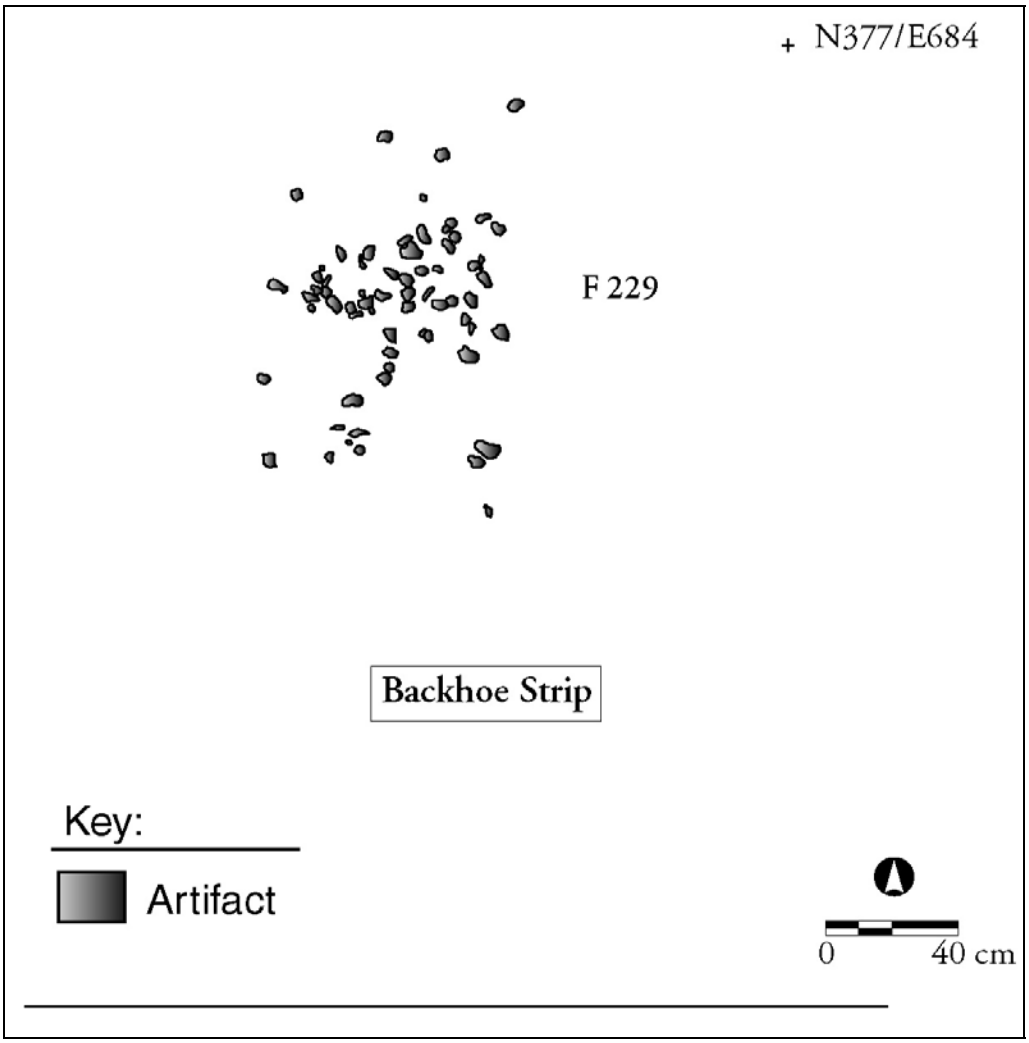

Figure 7.17 Planview of Feature 229

Type B: Basins

Type B features represented basins with variations in size, depth, and morphology (n=108). This category was sub-divided into three groups based on size: B1, larger than 2 m in the greatest dimension; B2, between 1-2 m in greatest dimension; and B3, less than 1 m in greatest dimension (Figure 7.18). Thirty-three basin features were identified in combination with biotic patterns, geomorphic intrusions, or other natural discontinuities. All artifact types were observed in Type B features; 68 percent contained both debitage and charcoal, TAS was present in 58 percent of the features and 47 percent of the features contained ceramics.

Type B1 represented basin features larger than 2 m in the greatest dimension (Figure 7.19). Of the 50 B1 features identified, 25 features contained additional morphological information. Four distinct morphologies were observed in these 25 B1 features and this category was further subdivided to reflect these variations in size and depth (Table 7.4). Over 70 percent of the features contained debitage, TAS, and charcoal. The majority of the large basins were located away from the terrace edge in Locus A, Block 2, and Locus G.

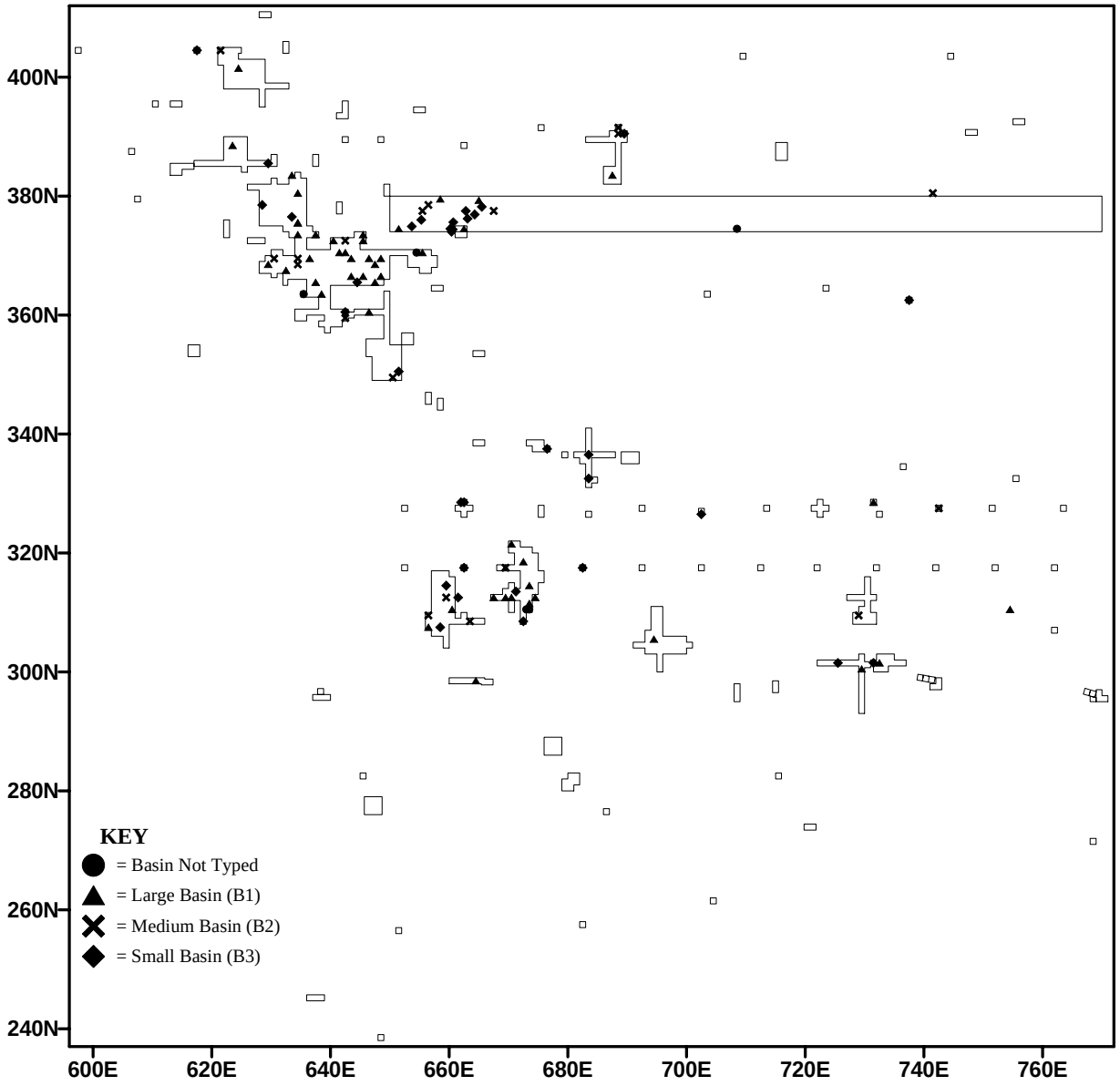

Figure 7.18 Location of All Basin Features by Type

Subtype B1-a features were characterized by D-shaped planviews; fifteen features were identified as subtype B1-a. Feature dimensions varied from 2 m-6.5 m in length and 0.80–5.50 m in width. Depth ranged from 60-132 cm. All of these features were ovoid to elliptical in planview with irregular perimeters. The profiles varied from gradually tapering on one side and steep-sided on the opposite edge, to a gradually sloping perimeter terminating in a steep-sided basin. The bases of these features were identified as rounded or undulated. With the exception of one feature (Feature 411), most B1-a features yielded artifacts. Eighty-seven percent of B1-a features contained ceramics, debitage, TAS, and charcoal. Natural cobbles and pebbles occurred in 80 percent of the features; cores were present in 73 percent of the B1-a features.

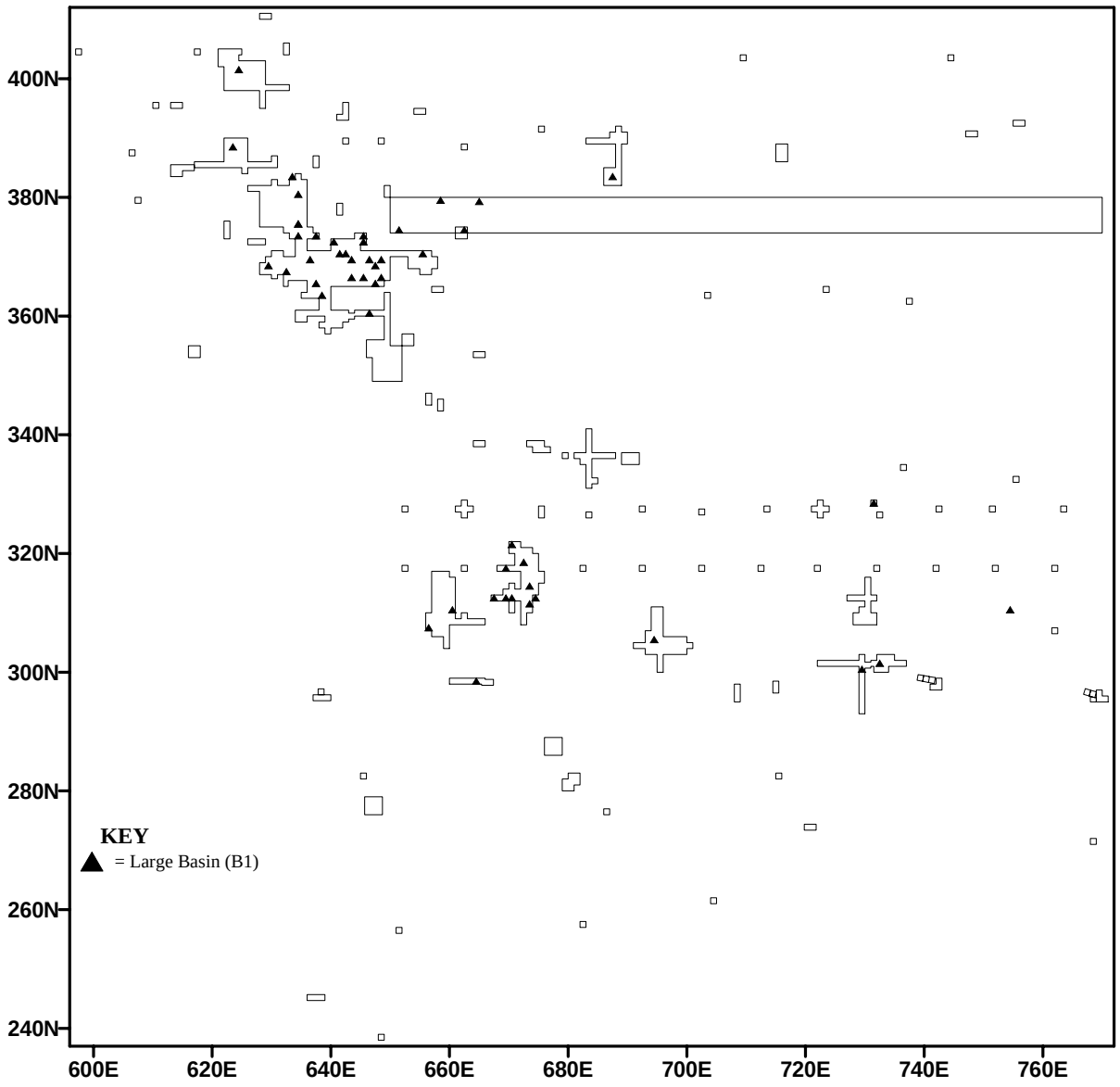

Figure 7.19 Location of All Large Basin Features (B1)

Table 7.4 Type B1 Feature Subtypes at Hickory Bluff

Type B1 subtypes	Morphology	Description	Frequency
B1-a	D-shaped	More than 2 m in greatest dimension; more than 1 m in depth	15
B1-b	Crescent-shaped	More than 2 m in greatest dimension; length is two or more times width	2
B1-c	Large bowl-shaped	Between 2 and 3 m in greatest dimension; between 50 cm and 1 m in depth	5
B1-d	Wide, shallow, flat-bottomed	More than 3 m in greatest dimension; less than 30 cm in depth	3

Feature 2, located in Locus G, consisted of a large, slightly irregular, ovoid basin measuring 3.9 x 2.54 x 1.15 m (Figure 7.20). The feature exhibited gradually sloping sides to a depth of 40 cm, then the sides were steep terminating in a round base. The feature matrix was distinguished from the surrounding E-horizon by a siltier texture, greater moisture retention, a darker shade of color, and an increase of charcoal flecks. The feature was identified at the top of the E-horizon and was partially disturbed by plowing. Artifacts associated with Feature 2 included 16 Marcey Creek ceramic sherds, 5 Clay Tempered ceramic sherds, 7 unidentified ceramic sherds, 1 pitted stone, 2 cores, 52 flakes, 4 chips, 119 TAS fragments, and floral remains. A radiocarbon date of 2790 +/- 40 years B.P. was obtained from unidentified charcoal.

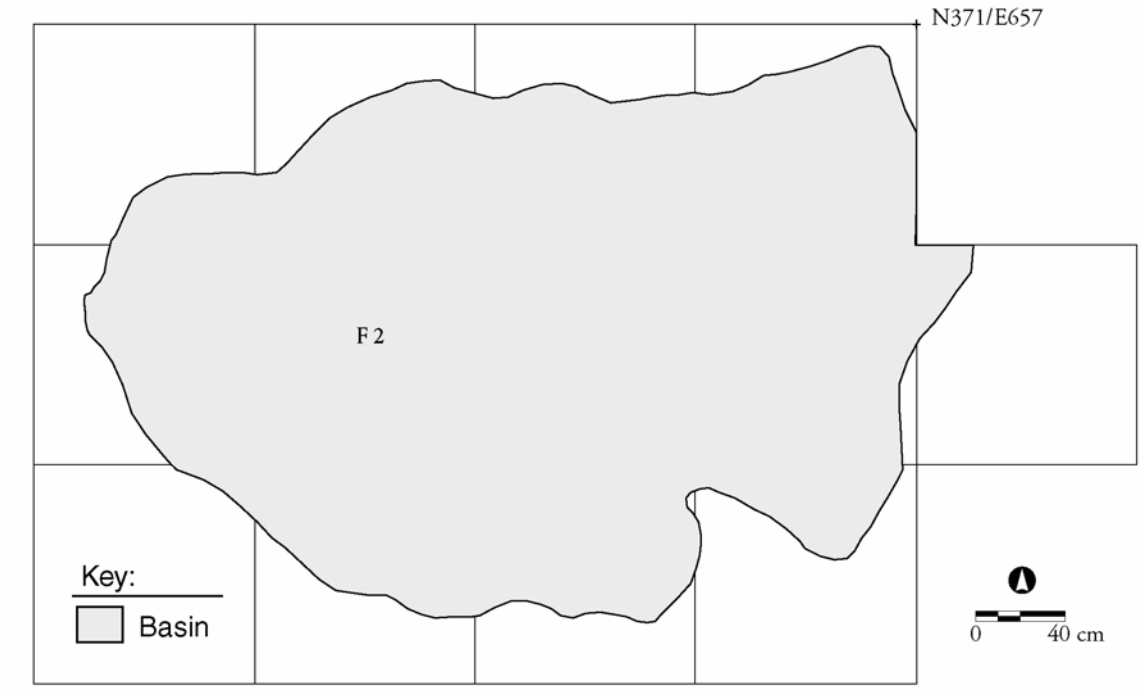

Figure 7.20 Planview of Feature 2

Feature 90, located in Locus I, consisted of a large basin with an oblong shape measuring 4.6 x 2.65 x 1.22 m (Figure 7.21 and Figure 7.22). The feature exhibited one steep side and one gradually tapering side that steepened sharply before terminating in a rounded bottom. The feature originated at the base of the A-horizon exhibited a siltier texture and a darker color than the surrounding E-horizon. Artifacts and charcoal flecking were recovered from all levels of the feature. Larger pieces of TAS occurred within the feature fill and followed the slope of the feature contact with the subsoil, reflecting the infilling process. The feature base sloped gradually from the south and was deepest in the northwest portion of the feature. Artifacts associated with the large basin included a Woodland I stemmed projectile point, a Koens-Crispin projectile point, 16 Marcey Creek ceramic sherds, 32 Clay Tempered ceramic sherds, 4 shell tempered ceramic sherds, 3 Hell Island ceramic sherds, 63 unidentified ceramic sherds, 1 early stage biface, 1 unifacial tool, 1 utilized flake, 2 hammerstones, 9 cores, 620 flakes, 27 chips, 112 TAS fragments, and floral remains. A radiocarbon date of 4070+/- 40 years B.P. was obtained from a charred hickory nut fragment.

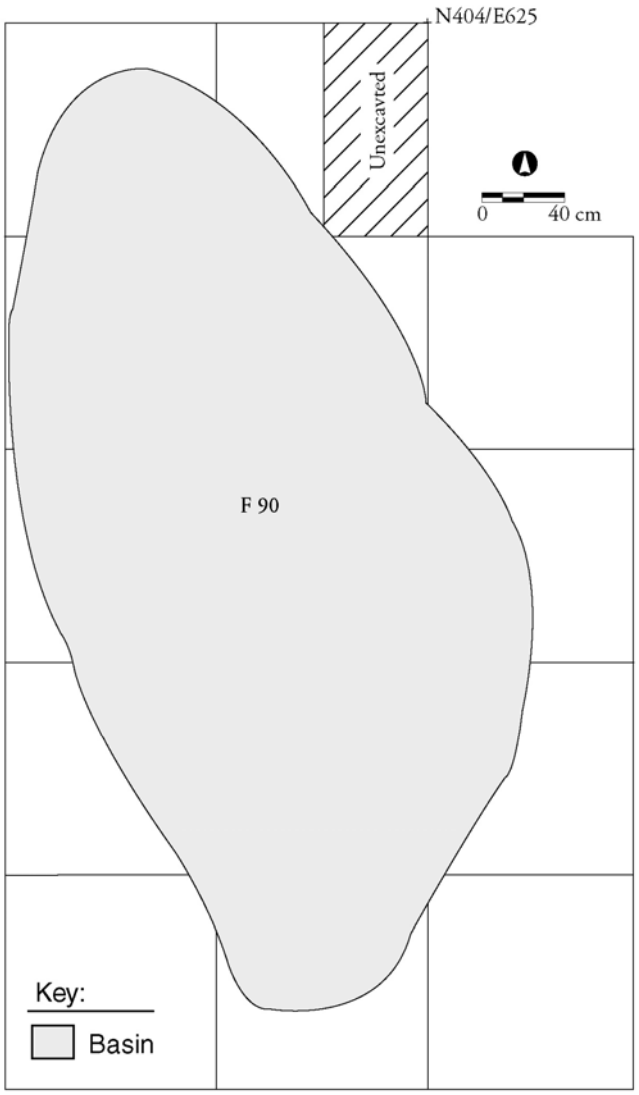

Figure 7.21 Planview of Feature 90

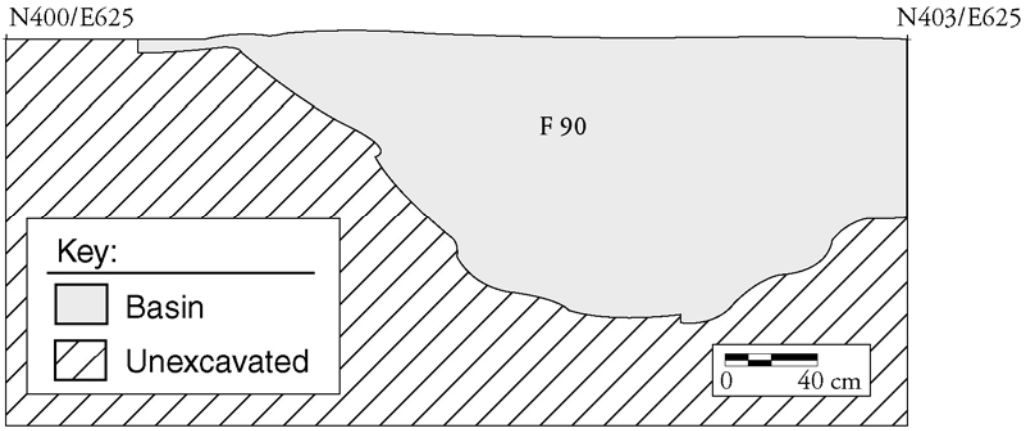

Figure 7.22 Profile of Feature 90

Subtype B1-b represented crescent-shaped features where the length was more than 2 times the width, but with variable depths. Only two features were designated B1-b: Features 78 and 297.

Feature 78, located in Locus H, consisted of a large, long and narrow crescent-shaped basin (Figure 7.23). The feature sides were steep and the feature measured 3.0 x 1.05 x 0.80 m. The feature matrix was a silty sand loam that was a yellowish brown, and darker than the E-horizon. The feature originated at the base of the A-horizon and contained a high density of artifacts and charcoal flecks in all excavated levels. The artifacts included 1 Lackawaxen projectile point, 1 untyped point, 1 unidentified ceramic sherd, 1 early stage biface, 1 late stage biface, 5 cores, 129 flakes, 33 chips, 355 TAS fragments, and 1 wood charcoal fragment. A radiocarbon date of 1850 +/- 60 years B.P. was obtained from ceramic residue.

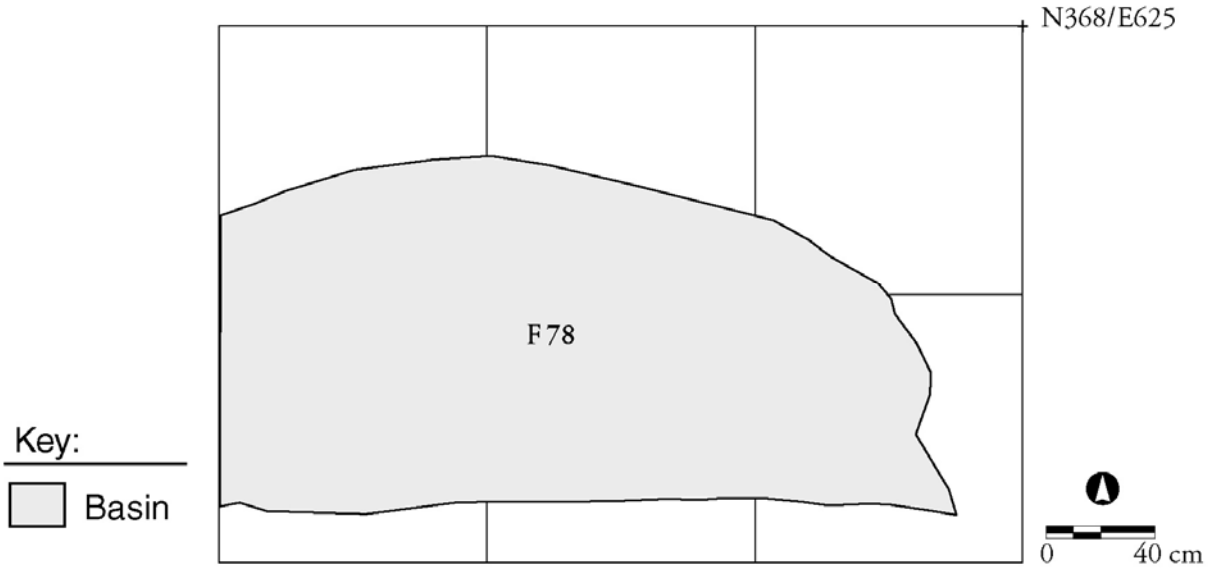

Figure 7.23 Planview of Feature 78

Feature 297, located in Locus G, consisted of a relatively large, shallow basin measuring 2.8 x 1.5 x 0.20 m (Figure 7.24). Feature boundaries varied; the east side was curvilinear and the west edge was irregular. The sides gradually sloped to a flat base. The feature matrix was darker in color, contained more silt, and was less compact than the surrounding E-horizon. A variety of artifacts were recovered in all excavated levels. They included 1 Woodland I stemmed projectile point, 1 untyped point, 4 Wolfe Neck ceramic sherds, 2 Popes Creek ceramic sherds, 5 Clay Tempered ceramic sherds, 13 unidentified sherds, 1 hammerstone, 1 early stage biface, 2 unifacial tools, 6 cores, 115 flakes, 26 chips, and 80 TAS fragments.

Subtype B1-c features were large bowl-shaped basins with maximum dimensions between 2 and 3 m. The depth varied between 0.50 and 1.0 m. Planviews were recorded as ovoid; three exhibited irregular perimeters. The profiles exhibited predominantly sloping or tapering sides. Five features were designated B1-c: Features 232, 252, 265, 287, and 291. All five features contained artifacts, although very few artifacts were recovered from Feature 252.

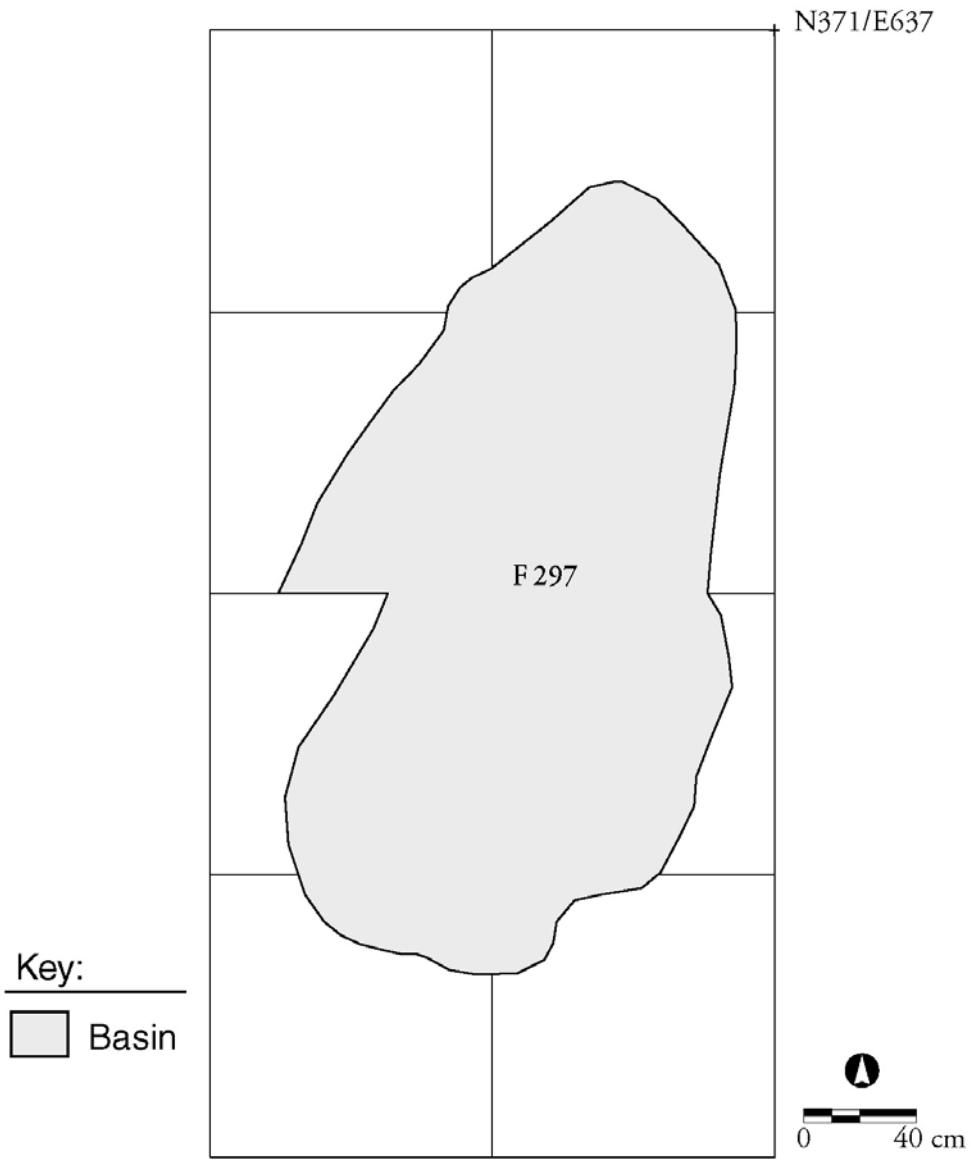

Figure 7.24 Planview of Feature 297

Feature 232, located in Locus G, was a combination B1-c/D3 feature (Figure 7.25). This feature was recorded as a large, deep bowl-shaped basin with intrusive rodent tunneling. The feature was ovoid in planview with steep and tapering edges that terminated in a smooth base. It measured 2.24 x 1.64 x 1.08 m. This feature was identified in the E-horizon and penetrated into the C-horizon. Rodent activity was observed in the north and west profiles and at the feature base. Tree roots obscured the south end of this feature. The feature matrix was sandy loam, mottled and darker in color with more charcoal flecking, and less compact than the E-horizon. Artifacts recovered from this feature consisted of 1 Koens-Crispin projectile point, 2 Clay Tempered ceramic sherds, 1 unidentified ceramic sherd, 2 early stage bifaces, 68 flakes, 5 chips, 20 TAS fragments, calcined bone fragments and unidentified floral remains.

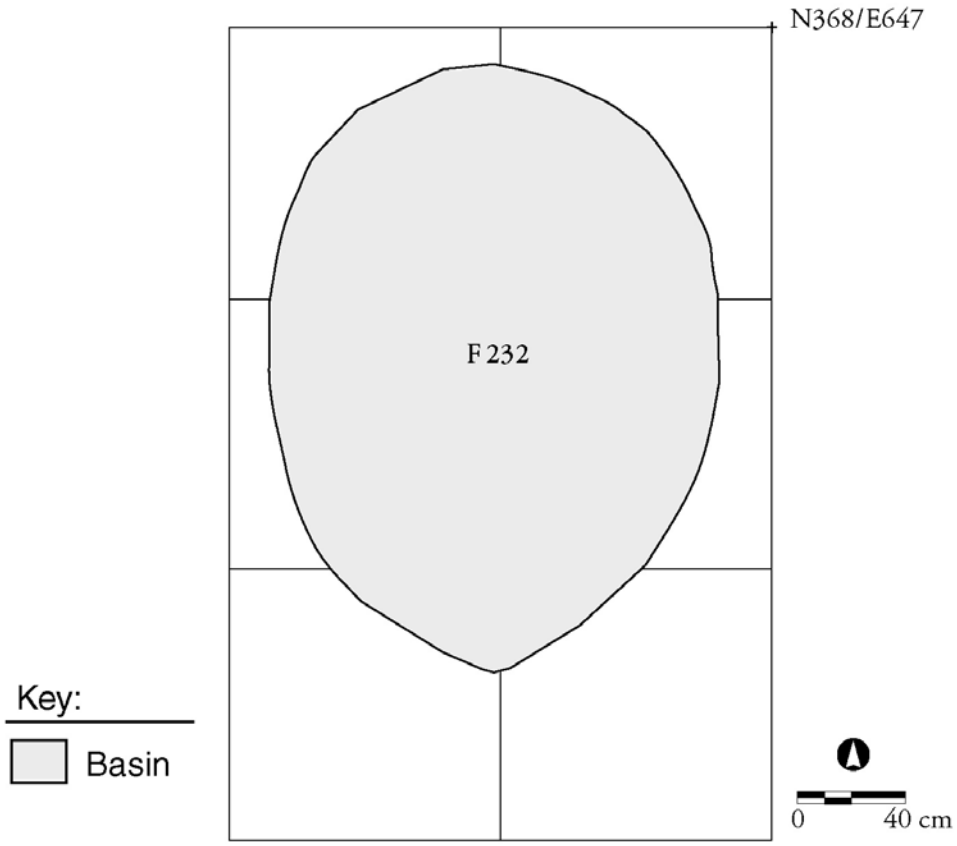

Figure 7.25 Planview of Feature 232

Feature 265, located in Locus G, consisted of a deep bowl-shaped basin that was partially excavated (Figure 7.26). The feature was ovoid with an irregular perimeter in planview and exhibited steep and gradually tapering sides. It measured 2.5 x 2.24 m, with a depth of 0.88 m. The feature was identified near the top of the E-horizon and was excavated into the B-horizon. The feature matrix was darker in color and contained more silt and charcoal flecks than the surrounding E-horizon. Artifacts associated with Feature 265 include 1 Selby Bay projectile point, 2 Marcey Creek ceramic sherds, 27 Clay Tempered ceramic sherds, 1 Mockley ceramic sherd, 69 unidentified ceramic sherds, 2 late stage bifaces, 2 cores, 168 flakes, 9 chips, 74 TAS fragments, and floral and faunal remains.

Subtype B1-d features were large shallow flat-bottomed basins, in excess of 3 m in the greatest dimension and no deeper than 30 cm. Three features were identified as B1-d: Features 1, 129, and 275.

Feature 129, located in Locus H, was an extremely large and shallow basin that measured 5.6 x 5.5 x 0.42 m (Figure 7.27). The feature was an irregular ovoid in planview with sides that gradually sloped to a smooth base that was deepest in the center. The feature matrix was a yellowish brown sandy loam similar to the E-horizon but exhibited a slightly siltier texture and retained more moisture than the surrounding soil. Artifacts were recovered from all levels of the feature. These included 1 Susquehanna projectile point, 1 Lackawaxen straight stemmed, 2

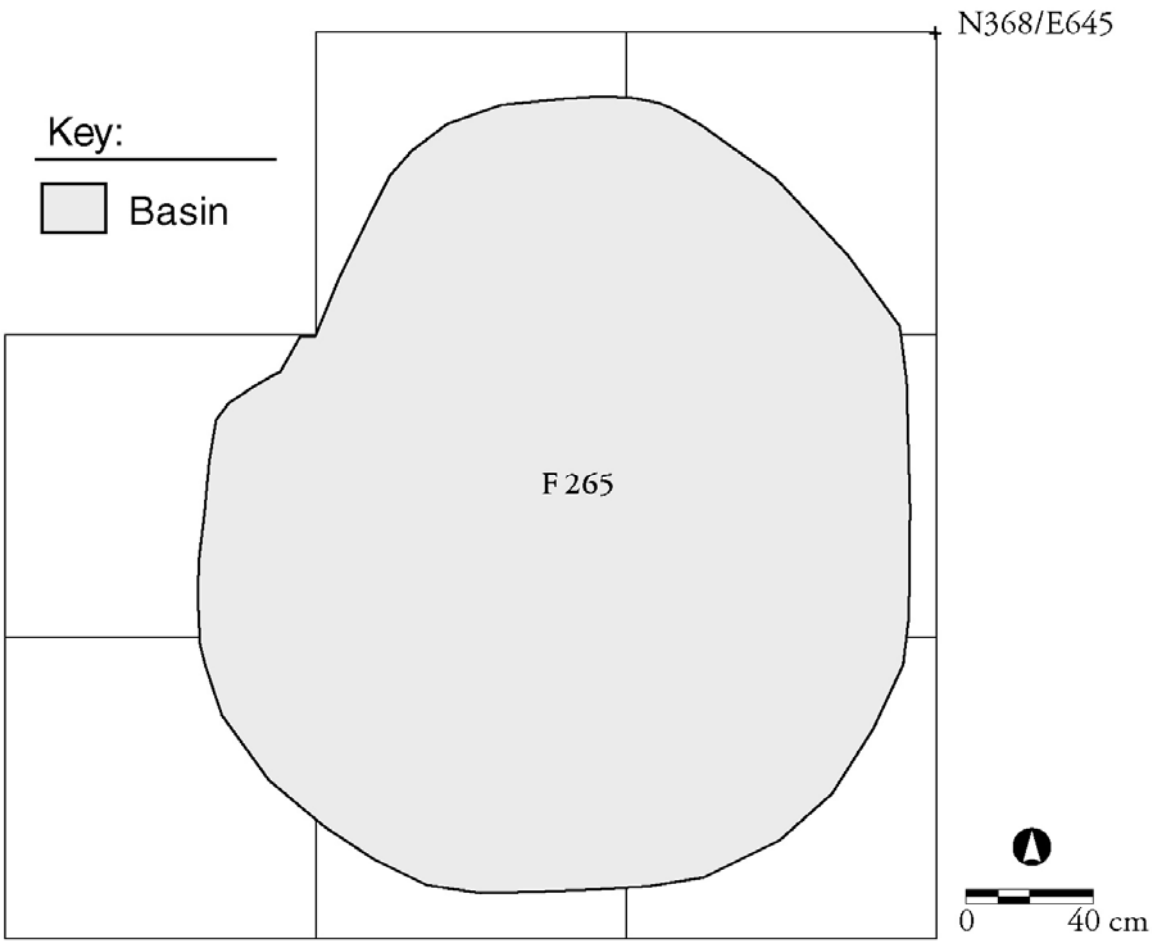

Figure 7.26 Planview of Feature 265

Poplar Island, 1 Woodland I side-notched, 5 Woodland I stemmed, 8 untyped projectile points, 13 Marcey Creek ceramic sherds, 2 Wolfe Neck sherds, 4 Mockley sherds, 103 Clay Tempered sherds, 138 unidentified ceramic sherds, 5 early stage bifaces, 6 late stage bifaces, 2 unifaces, 1 pitted stone, 7 hammerstones, 1,391 flakes, 80 chips, 17 cores, 606 TAS fragments, floral and faunal remains.

Feature 275, located in Locus G, consisted of an extremely large, irregularly shaped basin measuring 3.56 x 3.68 x 0.30 m (Figure 7.28). The feature was shallow with gradually tapering sides and a relatively flat base. The feature matrix was darker in color and retained more moisture than the surrounding E-horizon. Artifacts associated with Feature 275 included 1 Susquehanna projectile point, 1 Woodland I stemmed point, 1 Poplar Island point, 1 untyped point, 5 Marcey Creek ceramic sherds, 2 Wolfe Neck ceramic sherds, 9 unidentified ceramic sherds, 1 early stage biface, 1 late stage biface, 1 unifacial tool, 1 utilized flake, 174 flakes, 12 chips, 131 TAS fragments, and floral and faunal remains.

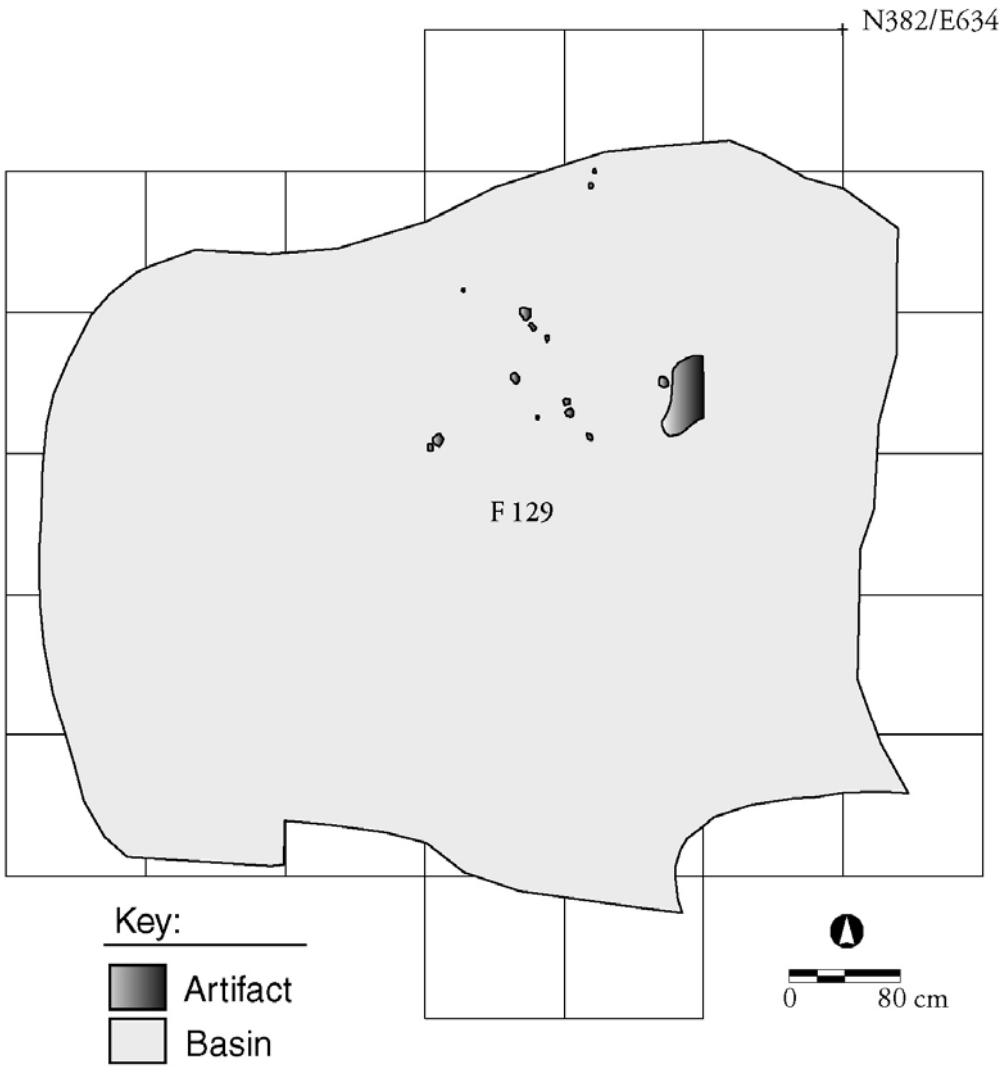

Figure 7.27 Planview of Feature 129

Type B2 represented basin features between 1 m and 2 m in greatest dimension (n=19). All artifact types were present in this feature type; 78 percent of the features yielded debitage, while over 60 percent of the features contained TAS and charcoal. The majority of the B2 basins were located along the terrace edge.

Feature 278, located in Locus I, consisted of an irregular curvilinear area determined to be a medium basin (Figure 7.29 and Figure 7.30). Only the southeast portion of the feature was excavated and the excavated portion of this feature measured 0.88 x 0.66 x 0.31 m. The feature sides gradually tapered to a smooth base. The feature profile revealed that the feature was mounded such that the feature matrix displaced the E-horizon higher in the profile in some areas. The feature matrix was a yellowish brown sandy loam that was darker in color and had a siltier texture than the adjacent E-horizon. Nine flakes were recovered from all levels of the feature.

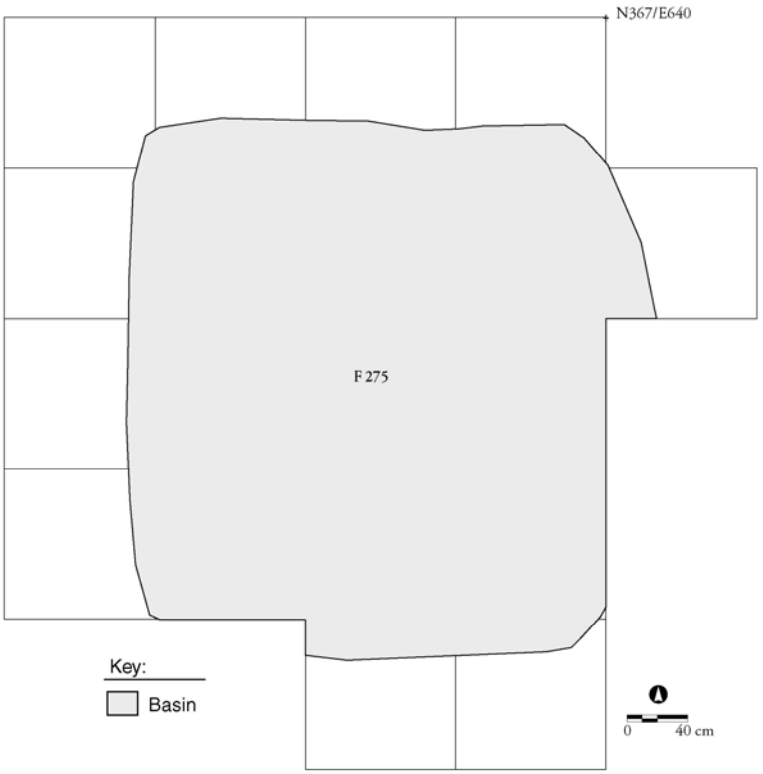

Figure 7.28 Planview of Feature 275

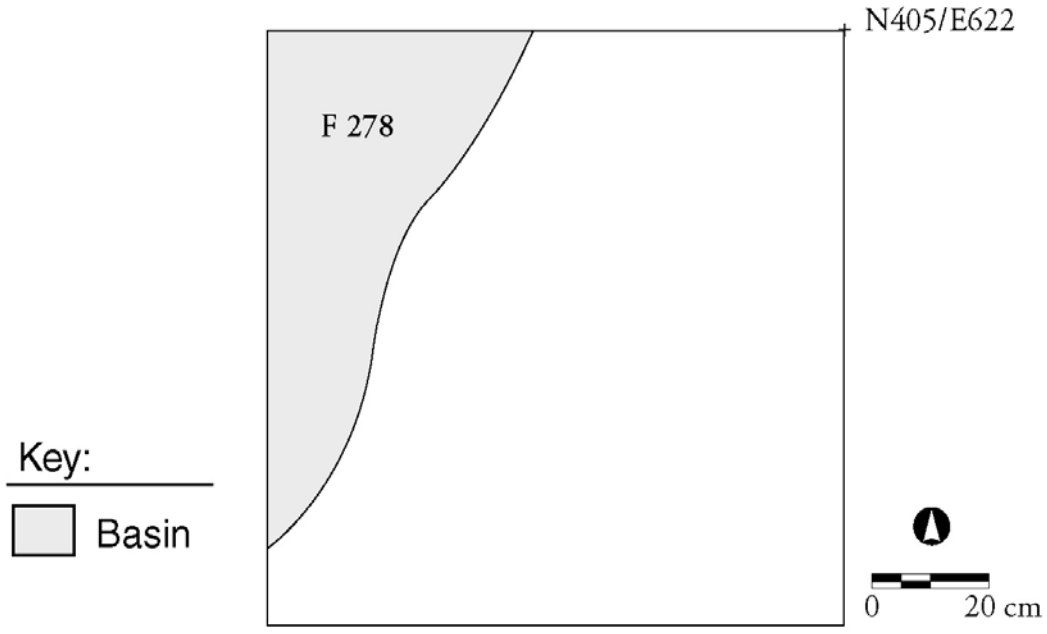

Figure 7.29 Planview of Feature 278

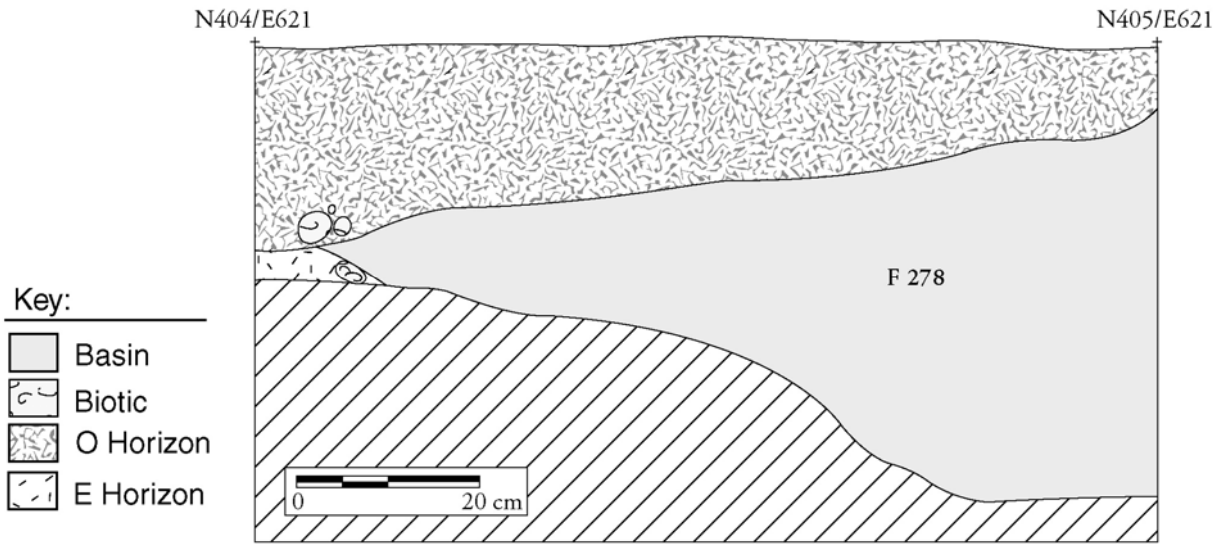

Figure 7.30 Profile of Feature 278

Feature 260, located in the backhoe strip, was ovoid in shape with an irregular perimeter (Figure 7.31). It measured 2.1 x 1.72 m horizontally, with a depth of 0.16 m. The edges of the feature were gradually sloping. One late stage biface, 5 flakes, 1 chip and 1 TAS fragment were recovered from this feature.

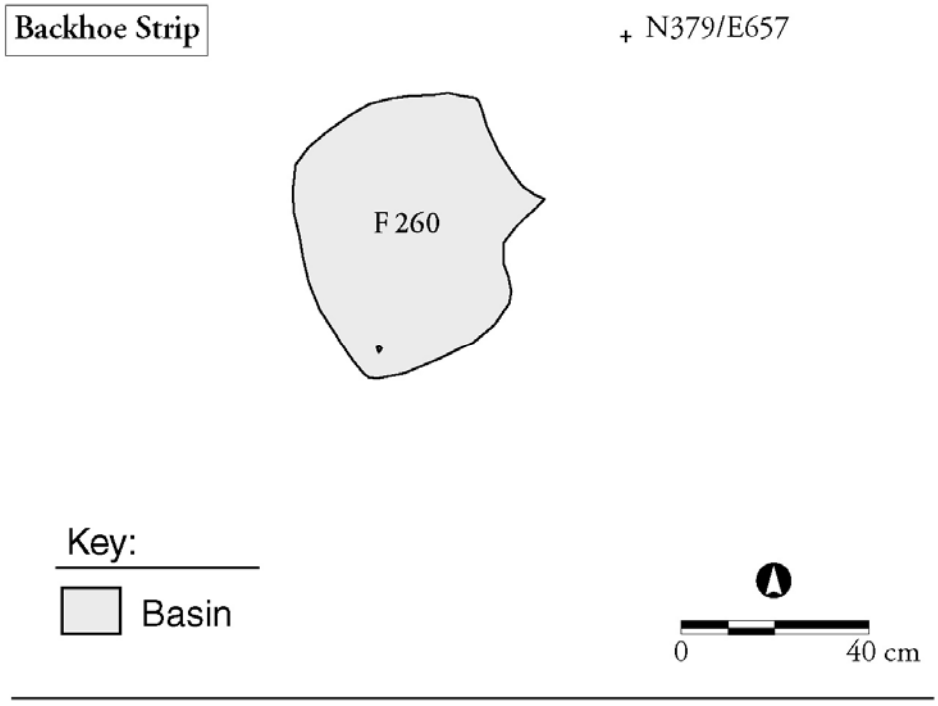

Figure 7.31 Planview of Feature 260

Type B3 was sub-divided into 3 subtypes based on size and depth (Table 7.5). Of the 34 B3 features, only 28 features contained discrete variations in morphology and were separated into subtypes. No features were found that represented subtype B3-c. No projectile points were

associated with B3 features, however, all other artifact types were present. Over 50 percent of the features contained TAS and charcoal. Small basins were identified in the backhoe strip in the northern portion of the site and in Locus A, Blocks 1 and 2, and Locus D (Figure 7.32).

Table 7.5 Type B3 Feature Subtypes at Hickory Bluff

Type B3 subtypes	Description	Frequency
B3-a	Less than 1 m in diameter; less than 1 m in depth	22
B3-b	Less than 40 cm in diameter; depth greater than width	6
B3-c	Less than 1 m in diameter; more than 1 m in depth	0

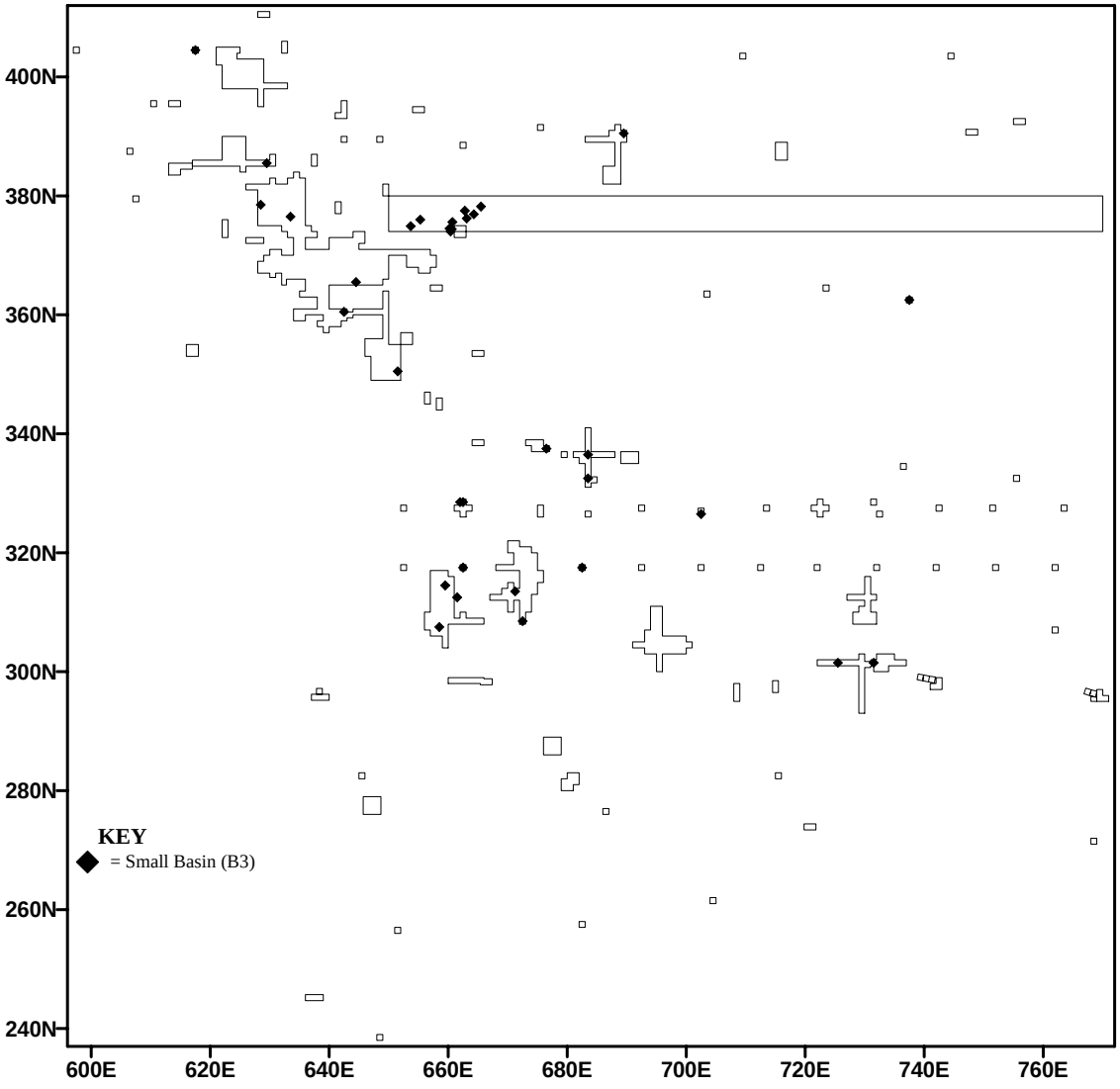

Figure 7.32 Location of All Small Basin Features (B3)

Subtype B3-a features (n=22) were small basins, less than 1 m in diameter and less than 1 m deep. Most were ovoid or round in planview. Edge and base morphology varied from steep-sided to tapering edges and flat, undulated, rounded or pointed bases. No projectile points were associated, but over 40 percent of the features contained debitage, charcoal, TAS and ceramics.

Feature 37, located in Locus F, consisted of a small circular basin measuring 50 cm in diameter and 8 cm in depth (subtype B3-a), and contained a concentration of ceramics (subtype A2) (Figure 7.33). The basin exhibited tapering sides and an uneven base. The primary feature matrix was slightly darker in color and exhibited a siltier texture than the E-horizon. It also contained charcoal flecks. The area of primary feature matrix was ovoid in shape and was surrounded by a lighter colored ovoid ring that comprised the secondary matrix. In profile, the shape remained consistent with the darker matrix overlaying the lighter matrix at the feature base. Artifacts recovered included 1 Marcey Creek ceramic sherd, 2 Clay Tempered ceramic sherds, 4 unidentified sherds, 1 piece of debitage, 2 TAS, and faunal remains. A radiocarbon date of 320 +/- 50 years B.P. was obtained from unidentified charcoal.

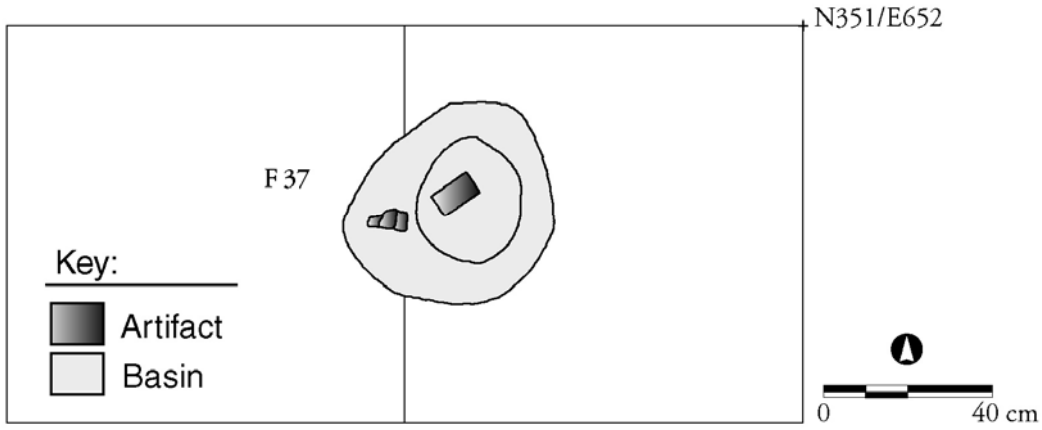

Figure 7.33 Planview of Feature 37

Feature 120, located in Locus A, consisted of a deep cylindrical basin with a rounded base (Figure 7.34 and Figure 7.35). The feature measured 0.75 x 0.40 x 0.95 m and had undulated to straight steep sides. The feature was identified at the base of the Ap/top of the E-horizon; the plow zone truncated the upper portion of the feature. Artifacts recovered from the feature included 3 Hell Island ceramic sherds, 5 Wolfe Neck ceramic sherds, 11 unidentified sherds, 6 flakes, 1 chip, 3 TAS and floral and faunal remains. The floral remains included a hickory nut fragment. A large carbon sample (Hickory wood fragment) was obtained from the coarse sand deposit at lowest level of the feature and yielded a radiocarbon date of 920 +/- 50 years B.P.

Feature 137, located in Locus A, consisted of a small shallow round basin with gradually sloping sides and a regular smooth base (Figure 7.36 and Figure 7.37). The feature measured 0.90 x 0.89 x 0.15 m. The feature matrix was slightly darker in color than the surrounding E-horizon and retained more moisture. Artifacts recovered from Feature 137 included 24 Marcey Creek ceramic sherds, 2 Clay Tempered ceramic sherds, 4 unidentified ceramic sherds, 8 flakes, 2 chips, 14 TAS, and floral and faunal remains.

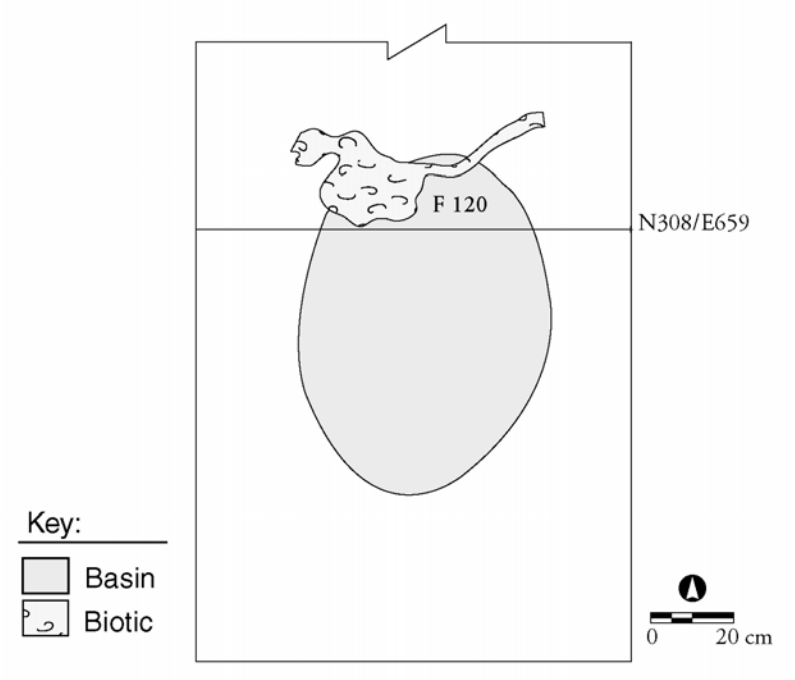

Figure 7.34 Planview of Feature 120

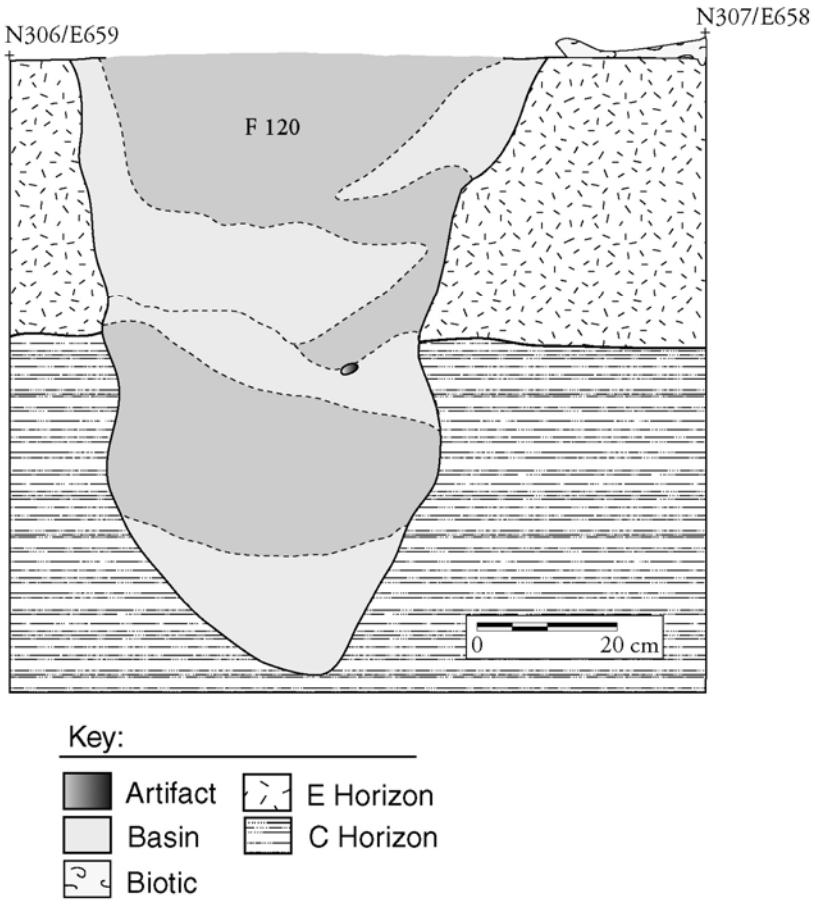

Figure 7.35 Profile of Feature 120

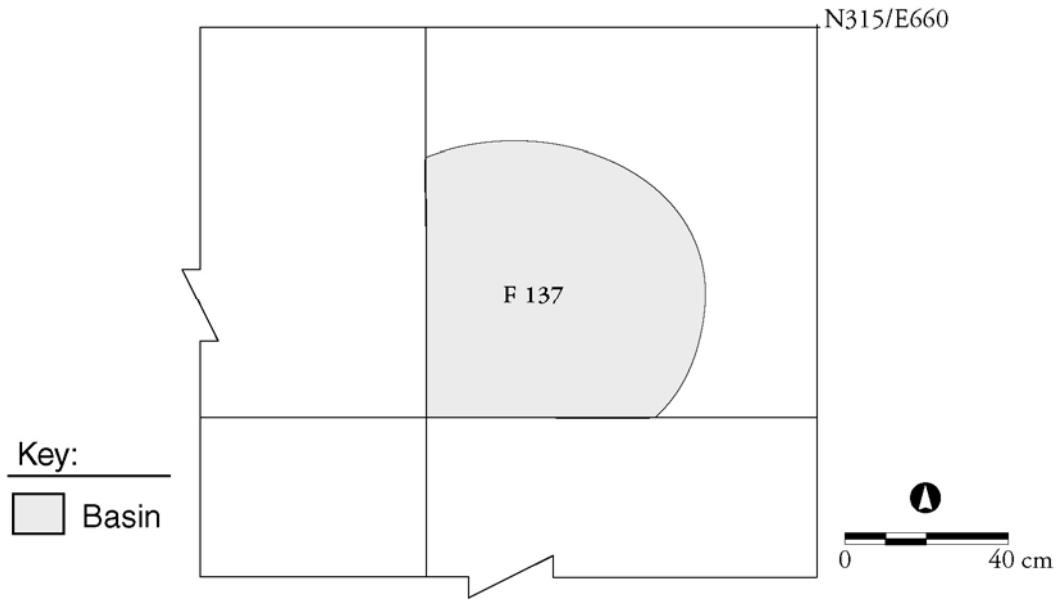

Figure 7.36 Planview of Feature 137

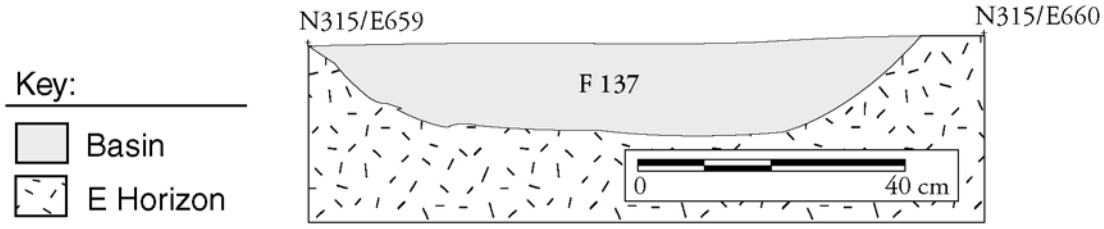

Figure 7.37 Profile of Feature 137

Feature 202, located in the backhoe strip, consisted of a small circular basin with steep sides and a flat bottom (Figure 7.38). The basin measured 0.36 x 0.34 x 0.15 m. The basin was delineated by a soil discoloration and a large quartzite stone (capstone). The feature matrix was a sandy loam, darker in color than the surrounding E-horizon. Charcoal flecking was also present in the matrix. Beneath the large quartzite stone, a double pitted stone and a pestle were situated side by side and located immediately above 10 Clay Tempered ceramic sherds that represented the same vessel.

Another small ovoid basin (Feature 203) was 10 cm away from Feature 202. Feature 203 consisted of a small circular area of darker colored soil and measured 0.33 x 0.30 x 0.12 m (Figure 7.38). The feature was identified at the base of the plow zone that truncated its uppermost portion. Excavations revealed discrete, shallow steep-sided walls and a rounded base; the feature matrix exhibited a more loamy texture than the surrounding E-horizon and contained charcoal flecking. Artifacts associated with this small feature included 3 pieces of debitage and 1 TAS.

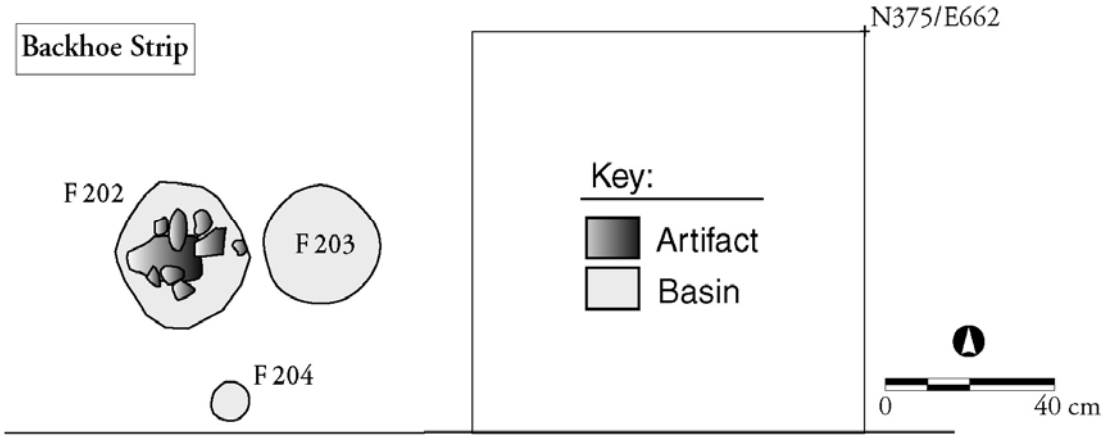

Figure 7.38 Planview of Features 202, 203 and 204

Subtype B3-b consisted of small basins less than 40 cm in diameter with a depth that was greater than the width. These size constraints resulted from deep cylindrical shaped features. Only six features were identified as B3-b: Features 4, 193, 198, 204, 225, and 267. Limited artifact types were associated with subtype B3-b and included charcoal (66 percent), TAS (50 percent), debitage (33 percent), and floral remains (17 percent). Two features were identified as historic/modern postholes (Features 193 and 198).

Feature 4, located in Locus D, was semi-ovoid with steep sides. It measured 0.42 x 0.37 x 0.92 m (Figure 7.39 and Figure 7.40). Artifacts recovered included 11 flakes, 1 chip and 1 TAS; a radiocarbon date of 1540 +/-50 years B.P. was obtained from unidentified charcoal.

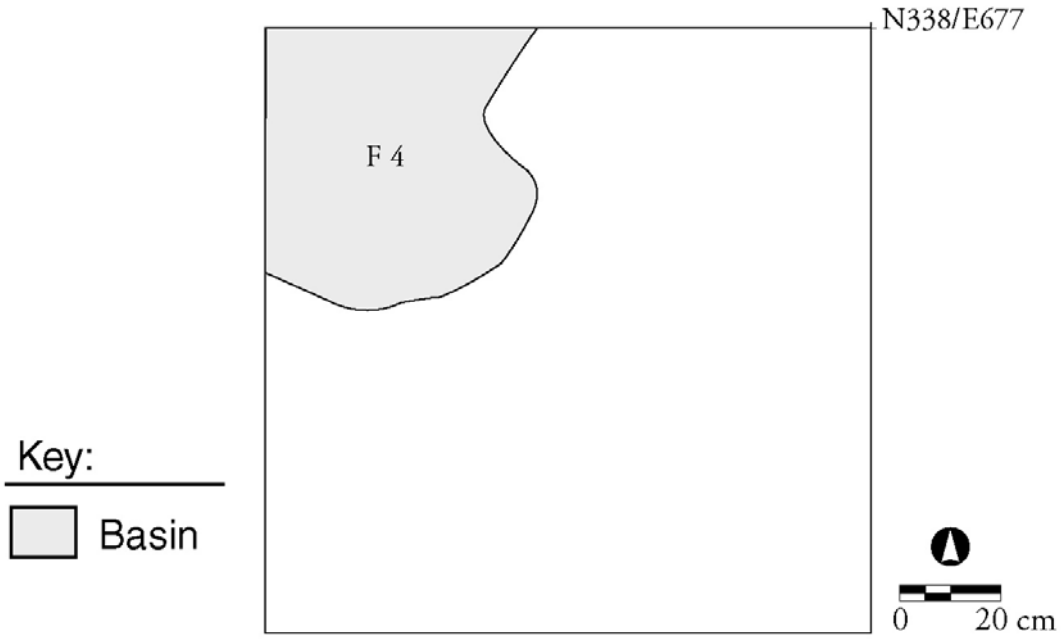

Figure 7.39 Planview of Feature 4

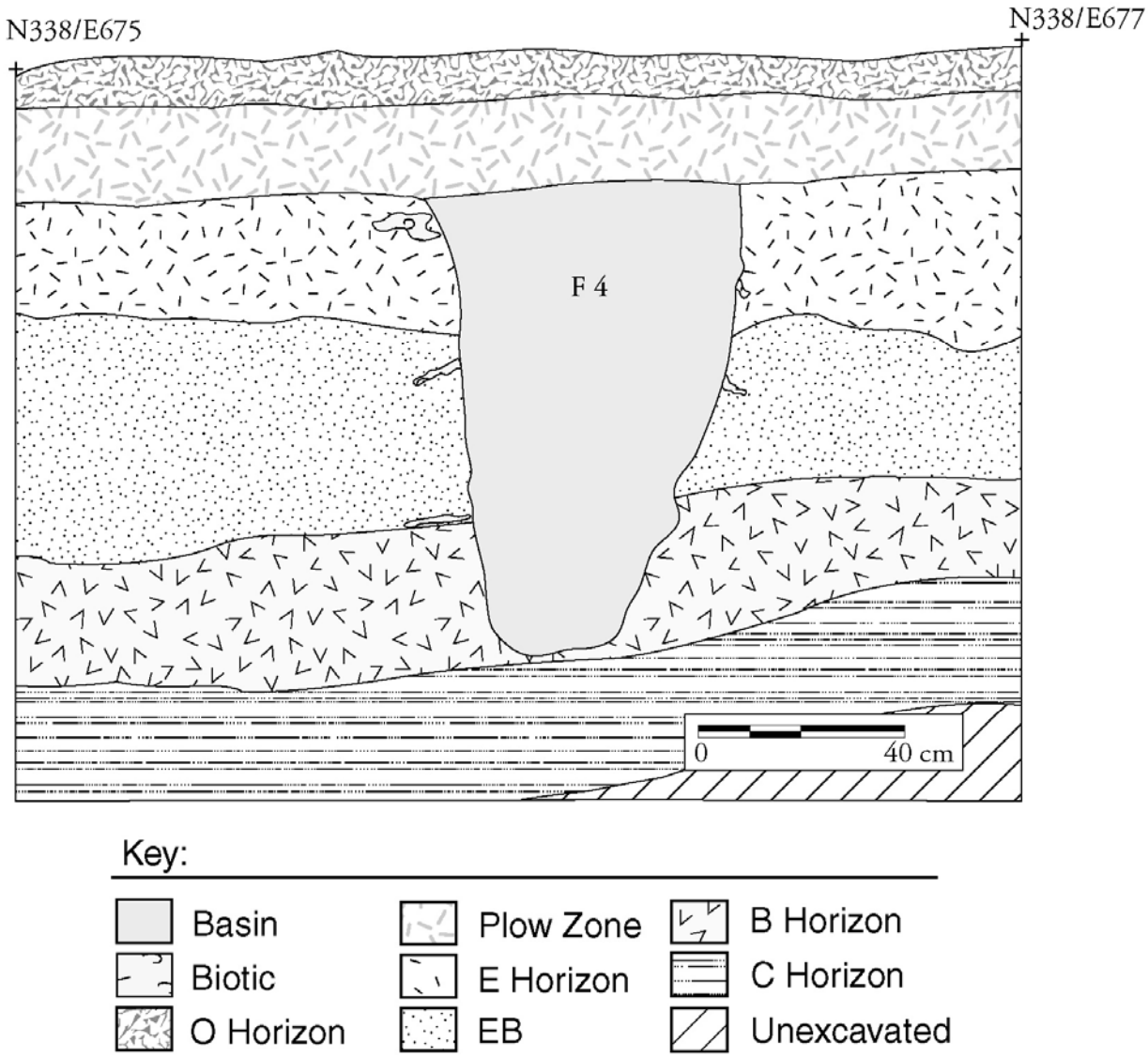

Figure 7.40 Profile of Feature 4

Feature 204, located in the backhoe strip, consisted of a small ovoid-shaped basin with steep sides and a bluntly rounded base (Figure 7.38). The basin measured 0.12 x 0.10 x 0.17 m. The basin was identified by darker colored soil than the surrounding E-horizon. Only one piece of debitage was associated with this small feature; no charcoal flecking was observed. This small feature was located within about 60 cm of both Features 202 and 203.

Type B Combination Features

Almost 72 percent (n = 33) of the forty-six combination features included basin features as a primary component. Feature 37 (B3-a/A2) was previously discussed.

Eighteen features are combinations of basins with biotic patterns. Seven features were disrupted by root channels and tree molds; nine features were disturbed by rodent activity. Two

features contain evidence of both floral and faunal disturbances. Artifacts are associated with 70.5 percent of the basin/biotic features and included Susquehanna (Feature 408), Koens-Crispin (Feature 232) and teardrop (Feature 253) projectile point types; Marcey Creek, quartz-tempered, Clay Tempered, and shell-tempered ceramic sherds; bifacial and unifacial tools, wedges, a spokeshave, a utilized flake, a hammerstone; cores and debitage, TAS, charcoal and floral remains.

Fourteen features were combinations of basins and geomorphic, other natural or undetermined discontinuities. Only 43 percent of these combination features (n = 6 of 14) contained artifacts and included a projectile point, tools, ceramic sherds, debitage, and TAS. Charcoal flecking was present in seven of the fourteen features.

Type C: Surface Anomalies

Seven features were designated as Type C or surface features: Features 36, 89, 115, 138, 258, 264, and 416 (Figure 7.41). Two features represented areas of compacted soils (subtype C1) characterized by irregular boundaries in both planview and profile. Feature 258 was a small ridge-like mound, approximately 15 cm thick, surrounding a series of large basins in the eastern portion of Locus G. The artifact assemblage associated with this feature included 2 Clay Tempered ceramic sherds, tools, debitage, 1 core, and 7 TAS fragments. The second area of compacted soil was identified in Unit N314 E672 (Feature 416) and was relatively thin and only 5 cm deep. One flake, on early stage biface, one uniface, one core, one TAS and charcoal were associated.

Three features (Features 36, 115, and 138) were designated as soil discoloration or areas of charcoal flecking (subtype C2). These features were irregular in planview with shallow and irregular profiles, and ranged in size from 0.58 x 0.42 m (Feature 36) to 2.2 x 0.68 m (Feature 138). Five pieces of debitage were recovered from Feature 138; no artifacts were associated with the other two features. Feature 36 was located in close proximity to Feature 234 (a medium basin).

Feature 89 was also an area of discolored soil and contained no artifacts. It was spatially associated with Feature 87, a TAS concentration. Feature 264 was an ovoid area of dark soil with an irregular perimeter. It contained a ceramic sherd, a tool, 10 flakes and 3 TAS fragments. Linear plow scars were observed at the base of this feature indicating that the feature was associated with historical plowing.

Type D: Biotic Patterns

One hundred ten features were designated as Type D and represented biotic patterns such as root channels, tree molds, and rodent burrows and tunnels (Figure 7.42). The 73 root channels (subtype D1) represented both horizontal and vertical root channels, and taproot molds. The vertical root channels were round, sub-round, ovoid, and semi-ovoid in planview with irregular tapering to conical bases in profile. The mean dimensions for these vertical root channels were 0.21 x 0.16 x 0.21 m. Thirty-two percent of the D1 features contained artifacts including Hell Island ceramic sherds (Features 88 and 133), unidentified ceramics, debitage, a core (Feature 268), TAS, floral remains (Feature 88) and faunal remains (Features 106 and 127). Charcoal

was present in 35 percent of the root channels. One horizontal root channel (Feature 147) was identified as a thin linear feature with a shallow irregular profile; its dimensions were 1 m long and 0.13 m wide. No artifacts were associated with Feature 147.

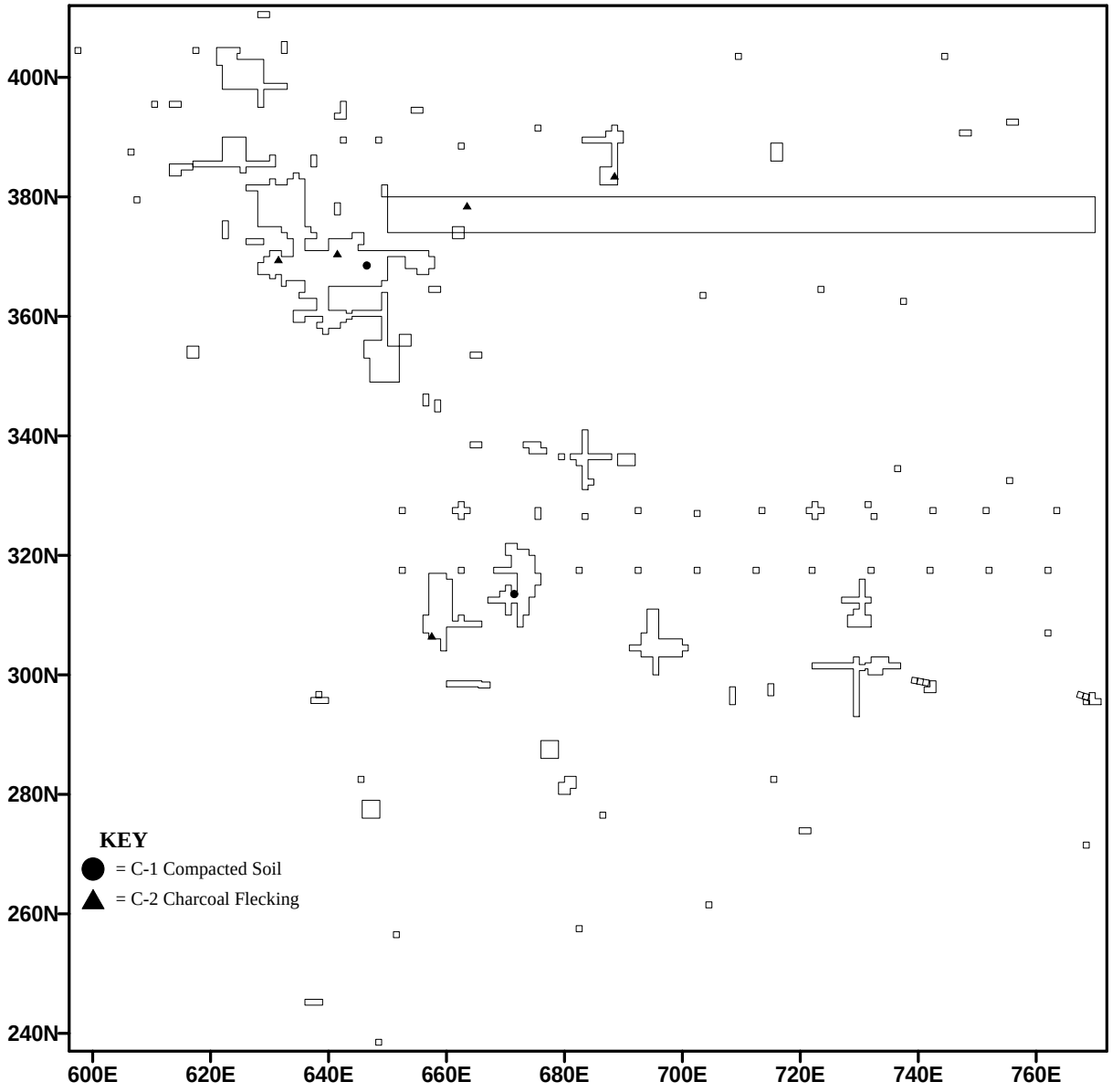

Figure 7.41 Location of All Surface Features (C)

Twenty features were identified as tree molds or possible tree burns (Type D2). Feature planviews varied from irregular to ovoid or curved, and profiles were shallow to tapering with rounded or flat bases. The mean dimensions for this feature type were 0.68 x 0.53 x 0.24 m. Artifacts were associated with 50 percent of the D2 features (n = 10) and included a stemmed Woodland projectile point (Feature 66), Clay Tempered ceramics (also Feature 66), an early stage biface (Feature 39), unidentified ceramic sherds, debitage, TAS, and floral remains. Charcoal was associated with 12 D2 features.

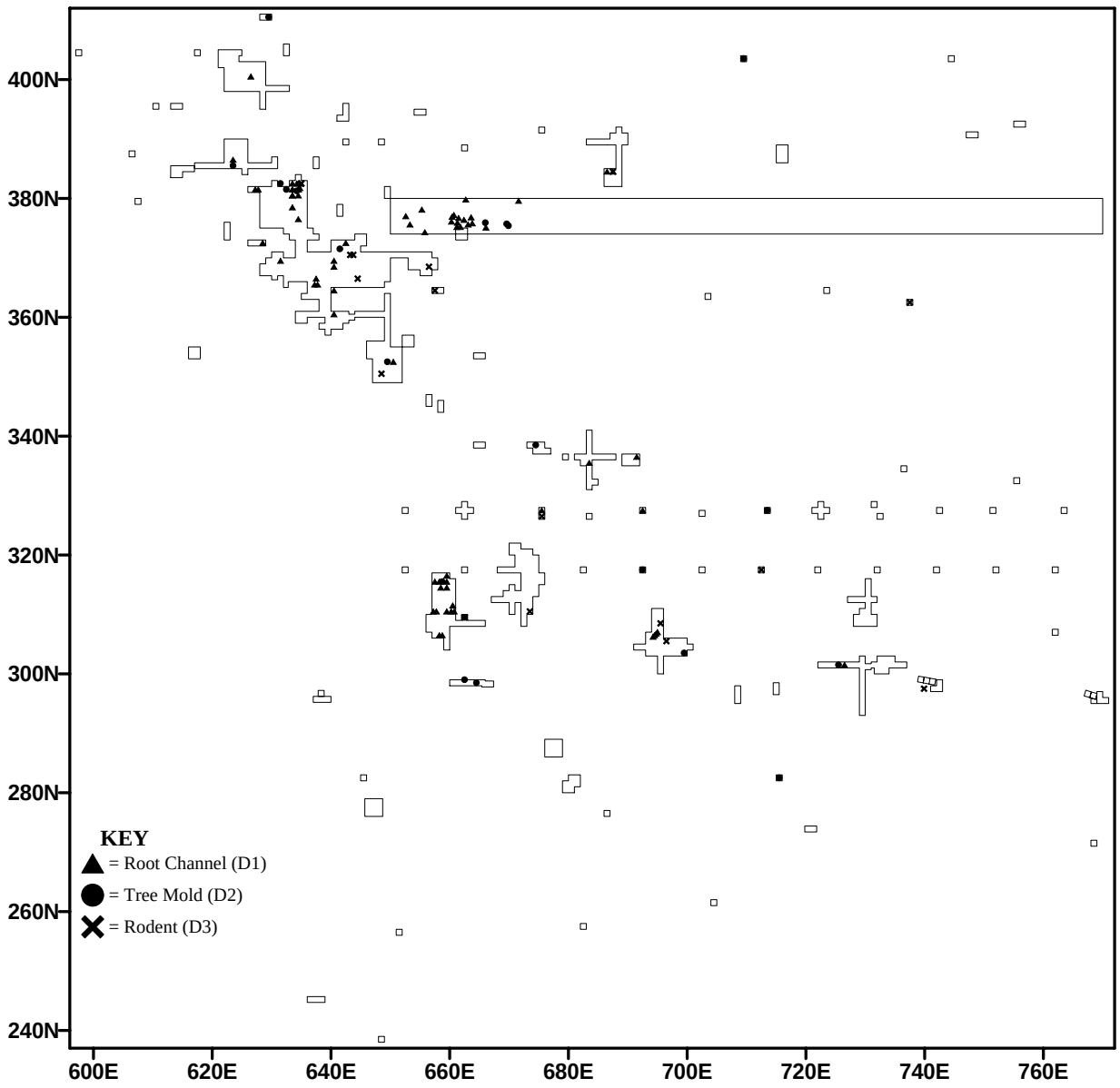

Figure 7.42 Location of All Biotic Features

Seventeen features represented rodent activity in the form of burrows or dens and ingress/egress tunnels (Type D3). Planviews were irregular, sub-ovoid, curved, bulbous, or curvilinear; profiles were irregular and undulating with sloping to steep sides. Dimensions were variable and ranged from 0.18 x 0.15 x 0.5 m to 3.5 x 1.2 m and shallow. Artifacts were associated with 37 percent of the D3 features (n = 6) and included a stemmed Woodland projectile point (Feature 32), a Clay Tempered sherd (Feature 157), unidentified ceramics, debitage, a core (Feature 157), and TAS. Charcoal fragments were recorded in 56 percent of the D3 features (n = 9). The presence of artifacts in some features suggested that rodent activity was subsequent to the cultural occupation.

Type E: Geomorphic Features

Twenty-five features were designated as Type E, or geomorphic features, and included areas of displaced subsoil (backfill from previous investigations or plowing), displaced or upwelling of the B-horizon, upwelling of the C-horizon, E/B or E/C transitions, fluvial deposits and non-cultural soil anomalies (Figure 7.43). The planviews were irregular and the profile descriptions consisted of irregular, tapering to level base, undulating, and shallow. Feature dimensions varied from 0.48 to 2.0 m in diameter and ranged from 0.07 m in depth to over 1.2 m. Thirty-nine percent of these features (n = 21) contained artifacts; four included clay tempered or Wolfe Neck ceramics (Features 70, 74, 188, and 304). A Bare Island projectile point was recovered from Feature 41.

Type F: Natural Discontinuities or Undetermined Anomalies

Thirty-six features were designated as Type F, or natural discontinuities (Figure 7.43). Feature morphology was irregular and profiles varied from irregular to tapering sides with conical bases. Feature dimensions varied from 0.43 x 0.40 m (Feature 18) to 3.55 x 1.7 m (Feature 223). Twenty-one percent of these features contained artifacts, including a Clay Tempered ceramic sherd, debitage, and floral and faunal remains.

Natural Combination Features

Twelve features were combinations of different types of natural occurrences (Types C, D, E, and F). Two features were undetermined natural discontinuities associated with Type B or D characteristics. Ten features represented combinations of natural occurrences such as surface features with biotic patterns or natural discontinuities (n = 2), combinations of biotic patterns (n = 5), and biotic patterns associated with geomorphic features and natural discontinuities (n = 3). No artifacts were recovered from the two surface features, only charcoal flecking. Feature 89 was about 54 cm in diameter with an irregular sub-ovoid planview; it was only 7 cm deep. Feature 115 measured 1.0 x 0.78 m with an irregular diffuse perimeter and varied from 1-3 cm deep (Figure 7.12). All four of the combination features represented biotic patterning and exhibited low densities of artifacts including ceramics, debitage, and TAS. Only two of the last four combination features (biotic patterns with geomorphic/natural discontinuities) contained artifacts consisting of debitage and TAS.

Hunter Research Backhoe Strip Features

In August 1995, monitoring of mechanical excavation for a DelDOT drainage ditch was conducted by Hunter Research, Inc. at the Hickory Bluff site (Figure 7.44). According to field notes, 106 soil anomalies were identified; however, only 72 were identified as possible cultural features and received feature designations. The majority of the features were identified after the removal of the E-horizon and sometimes, they occurred within the C-horizon. The first 9 features occurred on the western edge of the drainage ditch area and were systematically excavated. The remaining 63 features, located in the plowed field, were mapped and depths were determined using a soil probe. Detailed planviews were not recorded in the field. None of these 63 features was excavated; therefore, no profiles were documented. These features were subsequently destroyed during drainage ditch construction. Because of the lack of documentation sufficient to

categorize these features using the Hickory Bluff feature typology, these 63 features identified in the plowed field are not included in the current Hickory Bluff feature counts.

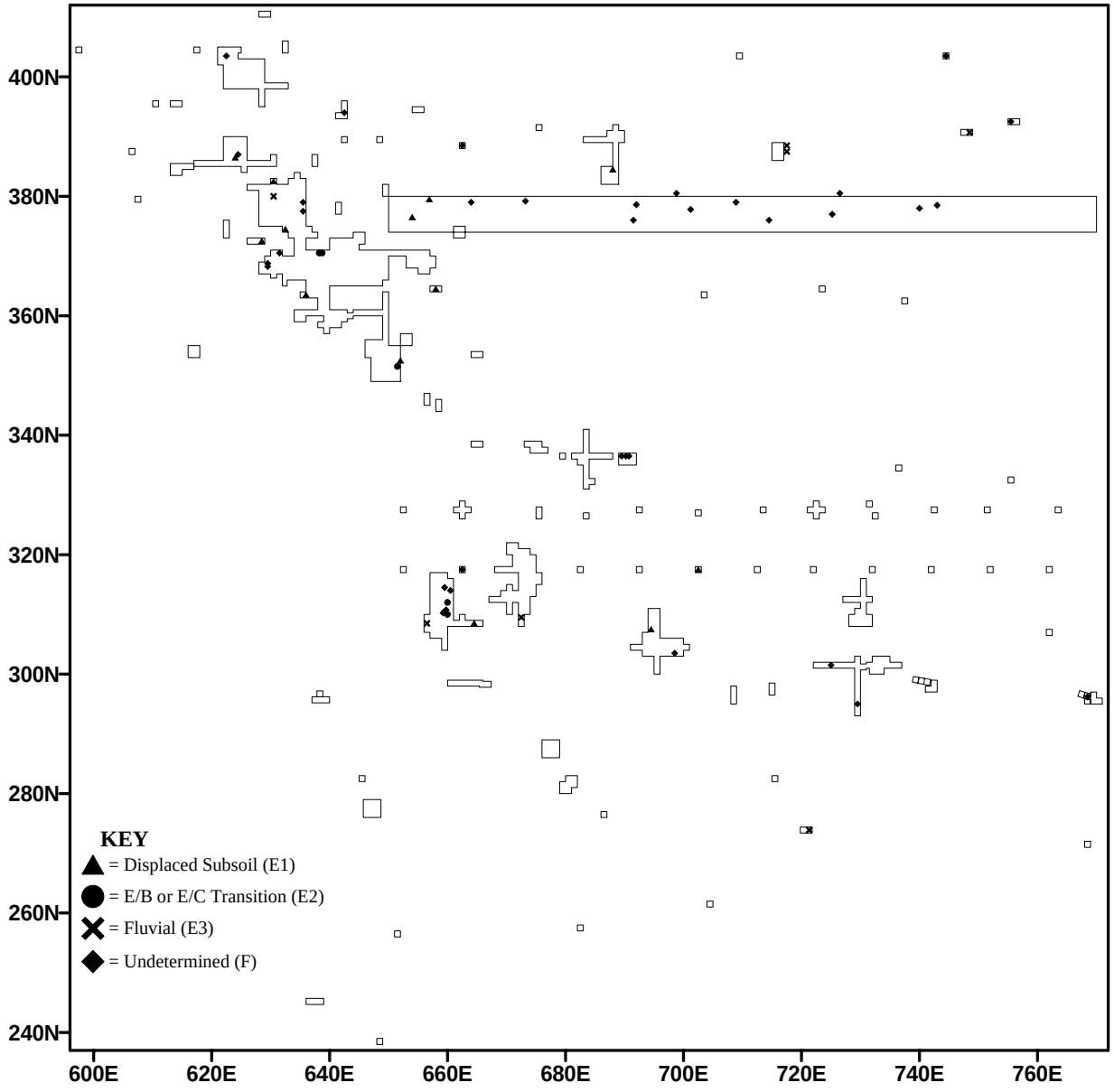

Figure 7.43 Location of All Geomorphic and Undetermined Features (E and F)

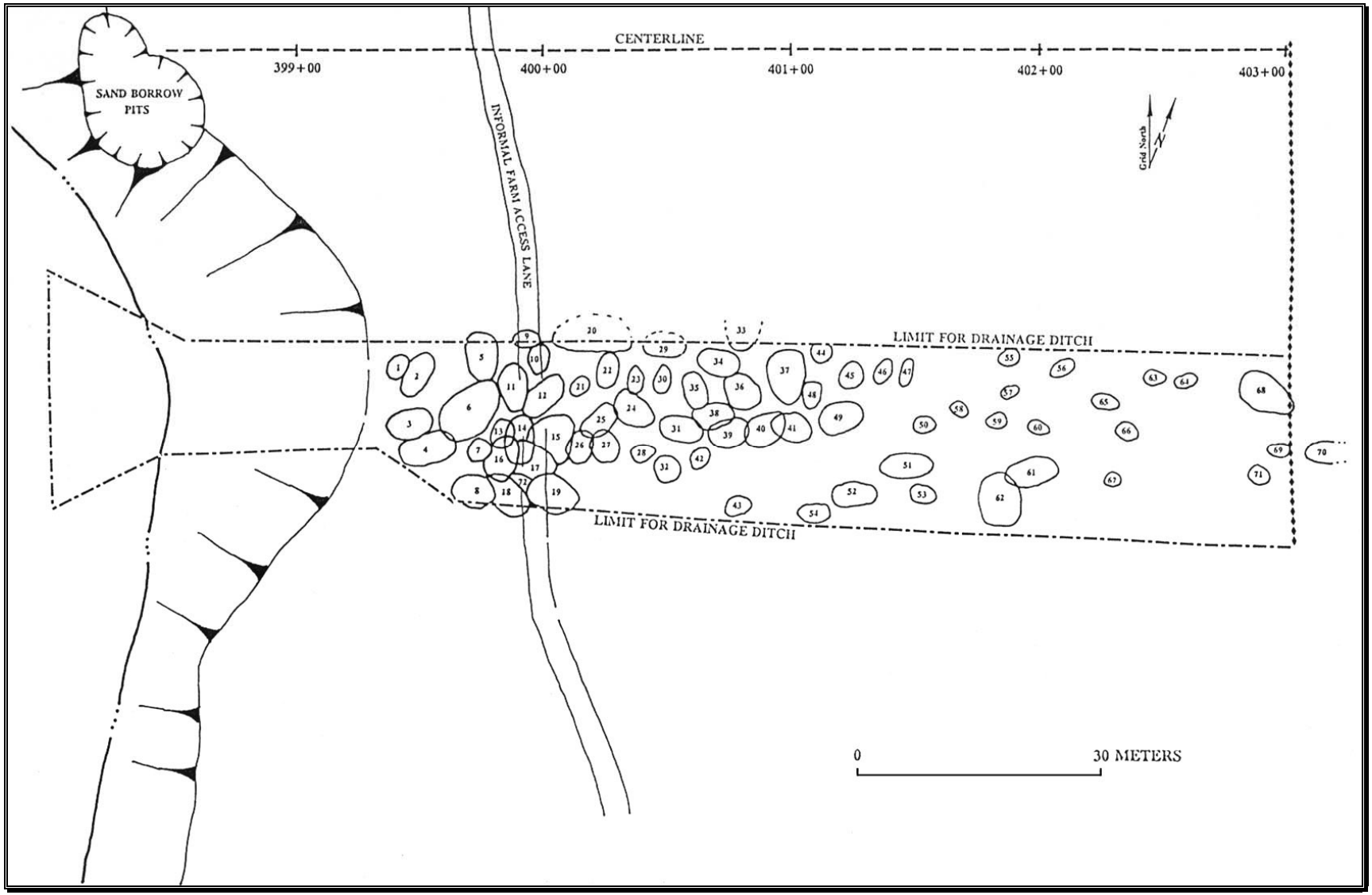

Figure 7.44 Features Identified in Hunter Research Backhoe Strip